DOCUMENT RESUME

ED 341 788 CE 060 239

TITLE	Competency-Based Education. Professional Development Series.
INSTITUTION	Mid-America Vocational Curriculum Consortium, Stillwater, Okla.
PUB DATE	92
NOTE	570p.
AVAILABLE FROM	Mid-America Vocational Curriculum Consortium, 1500 West Seventh Avenue, Stillwater, OK 74074 (order nos. CN200206-214: $44.50).
PUB TYPE	Guides - Non-Classroom Use (055)
EDRS PRICE	MF02 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Behavioral Objectives; *Competency Based Education; *Criterion Referenced Tests; Curriculum Development; Evaluation Criteria; *Faculty Development; Instructional Design; Learning Modules; Teaching Guides; Teaching Methods; Theory Practice Relationship; *Units of Study; Vocational Education Teachers

ABSTRACT

The competencies in this professional development guide are considered important to successful vocational teaching at the secondary and postsecondary levels. Each instructional unit provides learning experiences that integrate theory and application. Eight units are included: (1) planning for competency-based education; (2) aligning curriculum; (3) managing competency-based education; (4) writing performance objectives; (5) developing teaching/learning strategies; (6) implementing criterion-referenced evaluation; (7) developing components of a unit of instruction; and (8) developing learning activity packets. Introductory material includes information on the use of this series, instructional/task analysis, 78 references, and a glossary. Each instructional unit may contain the following basic components: introduction; objective sheet; suggested activities for the teacher; answers to assignment sheets; answers to written test; written test; unit evaluation form; teacher supplements; transparency masters; information sheet; student supplements; and assignment sheets. (NLA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

CBE

ED341788

Professional Development Series

CE 060 239

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it
☐ Minor changes have been made to improve reproduction quality
● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY
R C Brannon
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

Competency-Based Education Professional Development Series

Project Coordinated by

Jane Huston

Developed by

The Mid-America Vocational Curriculum Consortium, Inc.

Board of Directors

Larry Nelson, South Dakota, Chairman
Carol Fagan, Kansas, Vice-Chairman
Mervin Birdwell, Louisiana, Parliamentarian
Jean McEntire, Arkansas
Russell Blackman, Colorado
Margaret Ellibee, Iowa
Harley Schlichting, Missouri
Ann Masters, Nebraska
Ann Benson, Oklahoma
Sylvia Clark, Texas

Jim Steward, Executive Director

92-008667

CN 200206

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Competency-Based Education Professional Development Series

Table of Contents

Foreword v
Acknowledgements vii
Use of introductory materials ix
Use of this series xi
Instructional/task analysis xv
References xxiii
Glossary xxix

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

5

Foreword

One of the major goals of the Mid-America Vocational Curriculum Consortium (MAVCC) is to promote competency-based education as a method of instruction. Through the input of a committee comprised of teachers, teacher educators, curriculum and instructional specialists, educational consultants, and school administrators, MAVCC has developed the *Competency-Based Education Professional Development Series*. The competencies upon which these units of instruction are based were identified and verified by the committee as being important to successful teaching at both the secondary and postsecondary levels of instruction.

The design of these materials provides considerable flexibility for planning and conducting competency-based programs for preservice and inservice of teachers, as well as business-industry-labor trainers, to meet a wide variety of individual needs and interests. The materials are intended for use by universities and colleges, state departments of education, postsecondary institutions, local education agencies, and others responsible for the professional development of teachers and other trainers.

Each unit of instruction provides learning experiences that integrate theory and application. The materials are primarily designed for use by teachers or trainers working individually or in groups under the direction and with the assistance of teacher educators or others acting as resource persons. Resource persons should be skilled in the competencies being developed and should be thoroughly oriented to competency-based concepts and procedures before using these materials.

These instructional materials have been designed to assist teachers in improving instruction. Every effort has been make to make these materials basic, readable, and by all means, useable. The resource person will need to develop instructional strategies for localizing, individualizing, and supplementing the text, and motivating teachers who work with these instructional materials. Special attention should be given to the teacher pages in each unit of instruction. Suggestions for teaching the unit, suggested supplemental resources, a criterion-referenced test, teacher supplements, and transparency masters are included in the teacher pages for each unit. Each unit of instruction may be purchased separately for use in workshop and classroom settings.

As you use these instructional materials, we hope you will find they contribute to the improvement of the instructional process. If any problems occur or if you have any suggestions for improvement, please call us on our toll-free number (1-800-654-3988) or write to the Mid-America Vocational Curriculum Consortium, 1500 West Seventh Avenue, Stillwater, OK 74074-4364.

Larry Nelson, Chairman
Board of Directors
Mid-America Vocational
Curriculum Consortium

Jim Steward
Executive Director
Mid-America Vocational
Curriculum Consortium

Acknowledgements

Appreciation is extended to those individuals who contributed their time and talent to the development of MAVCC's *Competency-Based Education Professional Development Series*.

The contents of this publication were planned and reviewed by the following members of the MAVCC committee:

Dr. Bobbie Biggs	Teacher Educator, University of Arkansas, Fayetteville, Arkansas
Donna Brookhart	Teacher Educator, Colorado State University, Fort Collins, Colorado
Diane DeBacker	Instructional Facilitator, Auburn-Washburn USD 437, Topeka, Kansas
Margaret Ellibee	Consultant, Iowa Department of Education, Des Moines, Iowa
Lin Friedemann	Coordinator, Instructional Services, Oklahoma Department of Vocational-Technical Education, Stillwater, Oklahoma
Keith Harp	Assistant Superintendent, O. T. Autry Vocational-Technical School, Enid, Oklahoma
Mary Hendrix	Director, Occupational Curriculum Lab, East Texas State University, Commerce, Texas
Janet Huss	Consultant, Iowa Department of Education, Des Moines, Iowa
Dr. James McMurry	Teacher Educator, Louisiana State University, Baton Rouge, Louisiana
Ron Mehrer	Curriculum Specialist, North Dakota State Board for Vocational Education, Bismarck, North Dakota
Dr. Phyllis Miller	Assistant Director, Instructional Materials Lab, University of Missouri-Columbia, Columbia, Missouri
Dr. Lon Moeller	Teacher Educator, South Dakota State University, Brookings, South Dakota
Greg Pierce	Superintendent, Velma-Alma School System, Velma, Oklahoma

Dr. Harley Schlichting	Director, Instructional Materials Lab, University of Missouri-Columbia, Columbia, Missouri
Dr. Bruce Simpson	Curriculum Specialist, Department of Education, Little Rock, Arkansas
Greg Vander Weil	Teacher Educator, Wayne State College, Wayne, Nebraska

Gratitude is expressed to Rebecca Douglass of the East Central Curriculum Center and the Illinois Vocational Curriculum Center, to Ruth Patton of the East Central Curriculum Center, to Ruth Ann Glover of the Illinois Vocational Curriculum Center, and to Jim Steward and Jane Huston of the Mid-America Vocational Curriculum Consortium for their assistance in writing units of instruction included in the *Competency-Based Education Professional Development Series*. Without their help, this project would not have been completed.

Thanks are extended to the Instructional Services Division of the Oklahoma Department of Vocational-Technical Education for sharing resources during the development of this series. Thanks are also extended to Robert Brannon of the Mid-America Vocational Curriculum Consortium for his input and participation in this project.

Appreciation is also extended to Alisa Hines for word processing, to David Thompson for cover designs, and to the many other people in the Graphics Division at the Oklahoma Department of Vocational and Technical Education who assisted in the completion of this project.

Final thanks to Jane Huston, MAVCC Assistant Director, for editing this series and for coordinating this project.

Use of Introductory Materials

Introductory materials are included in the teacher edition only and contain useful information to assist administrators and teachers in planning for instruction.

In addition to the general information such as the table of contents, foreword, and acknowledgements page, information is included on the following:

1. **Use of this series**—Explains the components of a unit of instruction and how they should be used as part of the teaching/ learning process.
2. **Instructional/task analysis**—Provides a quick review of contents of each of the units; identifies cognitive (knowledge) skills and psychomotor (doing) skills addressed in each unit of instruction.
3. **Reference list**—Provides a comprehensive list of resources used in the development of this series.
4. **Glossary**—Provides a comprehensive list of terms and definitions presented in the first objective of each unit of instruction.

As you use these materials, it is hoped that they will provide useful information to meet a variety of needs.

Use of This Series

Instructional units

MAVCC's *Competency-Based Education Professional Development Series* contains eight units of instruction. Each instructional unit includes some or all of the following basic components of a unit of instruction: objective sheet, suggested activities for the teacher, answers to assignment sheets, answers to written test, written test, unit evaluation form, teacher supplements, transparency masters, information sheet, student supplements, and assignment sheets.

All of the unit components focus on measurable and observable learning outcomes. Teachers are encouraged to supplement, personalize, localize, and motivate with these materials in order to develop a complete teaching/learning process.

Units of instruction are designed for use in more than one lesson or instructional period. Careful study of each unit of instruction by the teacher will help to determine the following:

- Amount of materials that can be covered in each instructional period.
- Skills that must be demonstrated.
- Amount of time needed for demonstrations.
- Amount of time needed for student practice.
- Supplementary materials, including print and nonprint media and equipment and supplies, that must be ordered.
- Resource people who must be contacted.

Objective sheet (Color code: White)

Each unit of instruction is based on performance objectives which state the goals for successful completion of the course. These performance objectives are stated in two forms: unit objectives which state the expected performance of each student after completion of the unit of instruction, and specific objectives which state what the student must do to reach the unit objective.

The objectives should be provided for students and stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for the instructional unit. The objectives can also help determine teaching strategies and instructional methods. Teachers should prepare for each unit by deciding how each objective can best be taught.

Teachers should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When objectives are added, the teacher should remember to supply the needed information, assignment sheets, and criterion test items.

Suggested activities (Color code: Pink)

The suggested activities assist teachers during the preparation stage of the teaching/learning process by providing an instructional plan, teaching suggestions, and a list of supplemental resources. The teacher should read the suggested activities before teaching the unit and decide how each objective can best be taught. Time should also be allowed to obtain supplemental materials, prepare audiovisual materials, and contact outside resources. Duties of the teacher will vary according to the particular unit.

References used in the development of each unit are listed in the suggested-activities section, along with suggested supplemental resources that may be used to teach the unit. These materials can be used by the teacher to supplement her or his knowledge of the subject area or to help students with particular interests or objectives in the area covered.

Assignment and written test answers (Color code: Pink)

Assignment-sheet answers and written-test answers are designed to assist the teacher in evaluation of student performances.

Written test (Color code: Yellow)

This component provides criterion-referenced evaluation of every cognitive objective listed in the unit of instruction. Duplication of the written test is permitted for student use. If objectives have been added, deleted, or modified, appropriate changes should be made on the written test.

Unit evaluation form (Color code: White)

This sheet provides teachers with a record of each students performance on a unit of instruction. It includes space for assignment sheet ratings, written test scores, and teacher comments. The unit evaluation form may be duplicated.

Use of This Series

Teacher supplements (Color code: White)

Teacher supplements are optional materials for the teacher to use. They have three purposes: to provide the teacher with higher level materials to stretch the advanced student, with remedial information or practice to assist the less-advanced student, and with state-of-the-art information in which the teacher may not have background or with information that is not readily available in other books. Some teacher supplements may be duplicated for student use and are marked accordingly.

Transparency masters (Color code: White)

Transparencies are included to direct the students' attention to the topic of discussion. They may provide illustrations, charts, schematics, or additional information needed to clarify and reinforce objectives included in the unit of instruction.

Information sheet (Color code: Green)

The information sheet provides the content essential for meeting the cognitive (knowledge) objectives of the unit. Teachers will find that the information sheet serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective. Students should read the information sheet before the information is discussed in class. Space is provided in margins for students and teachers to add notes that supplement, localize, personalize, or provide information for the teaching of each objective.

Student supplements (Color code: White)

The information presented in a student supplement may consist of tables, charts, written information, forms, or other information students will need in order to complete one or more of the assignment sheets. Students are not directly tested over the information presented in a supplement; however, their ability to apply this information may be evaluated in the completion of assignment sheets.

Assignment sheets (Color code: Tan)

Assignment sheets provide students with pencil and paper activities that give students the opportunity to make practical application of the knowledge in the information sheet. Criteria are provided to objectively evaluate student performance.

Disseminating material

For best results, provide student materials for each student. Material may be given out pages at a time to keep the material before the student always new. Some teachers ask students to furnish a three-ring binder or folder for the current unit of study. This is convenient for students taking the material home to study. Students should be allowed to take their materials home at the end of the course.

Competency-Based Education Professional Development Series

Instructional/Task Analysis

Planning for Competency-Based Education

Related Information: What the Student Should Know

1. Terms and definitions
2. History of competency-based education
3. Major characteristics of a competency-based education program
4. Principles of competency-based education
5. Advantages of competency-based education
6. Institutions or agencies that use competency-based education concepts
7. Characteristics of competency-based education and traditional education
8. Requirements for implementing a competency-based instructional system
9. Steps for curriculum alignment
10. Steps for developing a competency-based instructional system
11. Differences among competency-based education, individualized instruction, and outcome-based education
12. What competency-based education means to the student, to the teacher, to the administrator, and to the employer

Application: What the Student Should Be Able to Do

13. Select statements that accurately describe competency-based education
14. Complete a competency-based checklist for a course or program
15. Develop a philosophy statement on competency-based education
16. Develop a plan to implement competency-based education

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Aligning Curriculum

1. Terms and definitions
2. Steps in the curriculum alignment concept
3. Advantages of curriculum alignment
4. Problems to overcome in curriculum alignment
5. Steps for curriculum alignment
6. Characteristics of a program description
7. Sources of curriculum materials
8. Procedures for completing a task analysis for a program or course
9. Reasons for verifying a task list
10. Benefits of involving business, industry, and labor in curriculum development
11. Techniques to verify or validate task lists
12. Ways to sequence tasks
13. Steps in conducting an instructional analysis
14. Reasons to adapt or revise instructional materials
15. Ways to adapt instructional materials
16. Suggestions for aligning performance and written evaluations
17. Determine a program or course description
18. Locate sources of curriculum materials
19. Verify a task list
20. Sequence tasks
21. Evaluate existing instructional materials
22. Select instructional materials based on a verified or validated task list
23. Complete a checklist for aligning test items

14

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Managing Competency-Based Education

1. Terms and definitions
2. Common aspects of maintaining and managing the physical environment
3. Factors which affect long-range planning
4. Reasons for developing and maintaining a filing system
5. Factors that will determine the filing system to use
6. Decisions to make in starting and maintaining a filing system
7. Reasons for monitoring student progress
8. Steps in developing a system to monitor student progress
9. Reasons for developing a progress chart
10. Purposes of competency profiles
11. Guidelines for using competency profiles
12. Information to include on a competency profile
13. Purposes of grading patterns
14. Characteristics of a good grading pattern
15. Approaches for assigning grades
16. Goals of a learning contract
17. Steps in the development of a learning contract
18. Items in a learning contract
19. Develop a plan to implement competency-based instructional materials into an existing program
20. Develop a plan for an appropriate filing system
21. Develop a progress chart
22. Write a plan for using a competency profile in a program
23. Apply techniques in establishing a grading pattern
24. Develop a grading pattern
25. Complete a student performance contract
26. Complete a learning contract for a grade

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Writing Performance Objectives

1. Terms and definitions
2. Instructional intent of a performance objective
3. Advantages of using performance objectives
4. Things to do before writing performance objectives
5. Components of a performance objective
6. Domains of the Taxonomy of Educational Objectives
7. Criteria for writing performance objectives
8. Process for developing acceptable criteria for performance objectives
9. Criteria for writing test items
10. Select components of performance objectives
11. Distinguish between performance objectives and nonperformance objectives
12. Convert nonperformance objectives to performance objectives
13. Write performance objectives
14. Write test items for performance objectives

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Developing Teaching/Learning Strategies

Related Information: What the Student Should Know

1. Terms and definitions
2. Teacher characteristics that support quality learning
3. Strategies for meeting individual learning styles
4. Concepts of individualized instruction
5. Guidelines to consider in selecting strategies for individualizing instruction
6. Strategies for motivating students
7. Teaching strategies to increase time on task
8. Techniques for instructional delivery
9. Steps in the problem-solving approach
10. Teaching goals for reinforcing basic skills
11. Essential workplace basic skills
12. Stages for successful teaching/learning process
13. Strategies that must be done with instructional materials
14. Ways to localize and individualize instructional materials
15. Factors to consider when developing a lesson plan to teach a unit of instruction

Application: What the Student Should Be Able to Do

16. Discuss perceptions of individualized instruction
17. Determine instructional activities that create a positive learning environment
18. Solve problems using instructional strategies
19. Select instructional techniques
20. Complete a checklist for evaluating a lesson plan using the problem-solving approach
21. Determine basic skills being reinforced by performance objectives
22. Develop a lesson plan

Related Information: What the Student Should Know

Application: What the Student Should Be Able to Do

Implementing Criterion-Referenced Evaluation

1. Terms and definitions
2. Purposes for evaluation
3. Steps in the alignment concept
4. Descriptions of norm-referenced evaluation and criterion-referenced evaluation
5. Characteristics of norm-referenced and criterion-referenced evaluation
6. Domains of the Taxonomy of Educational Objectives
7. Categories of written test items used to measure knowledge
8. Advantages of types of written test items
9. Advantages and disadvantages of using a performance test as an evaluation tool
10. Types of performance tests
11. Types of instruments used to assess student attitudes and values
12. Determine methods to use in assessing student knowledge
13. Develop a performance test
14. Develop an instrument to assess student attitudes

Developing Components of a Unit of Instruction

Related Information: What the Student Should Know

1. Terms and definitions
2. Definition of competency-based education
3. Process used in developing units of instruction
4. Copyright laws and how they pertain to instructional development
5. Procedure for securing copyright permission
6. Components of a unit of instruction
7. Procedure for evaluating components of a unit of instruction

Application: What the Student Should Be Able to Do

8. Select components of a performance objective
9. Distinguish among domains of the Taxonomy of Educational Objectives
10. Distinguish between performance and nonperformance objectives
11. Convert nonperformance objectives to performance objectives
12. Write objectives for a unit of instruction
13. Develop an information sheet
14. Design a transparency master, teacher supplement, or student supplement
15. Develop an assignment sheet and answers to assignment sheet
16. Develop a job sheet
17. Write test items and answers to test items
18. Prepare a unit evaluation form
19. Prepare a suggested activities sheet
20. Evaluate components of a unit of instruction

Related Information: What the Student Should Know	**Application: What the Student Should Be Able to Do**
Developing Learning Activity Packets	
1. Terms and definitions	12. Develop a referral LAP
2. Major purposes of a learning activity packet	13. Develop a self-contained LAP
3. Types of LAPs	
4. Benefits of a LAP	
5. Components of a LAP	
6. Suggestions for sequencing LAPs	
7. Importance of indexing LAPs	
8. Guidelines for selecting media for LAPs	
9. Selecting activities for LAPs	
10. Copyright laws	
11. Procedure for securing copyright permission	

Competency-Based Education
Professional Development Series

References

Able Insights. Dallas, TX: Center for Successful Learning, 1990.

Appleby, Judith A. *Conducting Task Analyses and Developing Instructional Objectives.* Module 8. Springfield, IL: American Institute for Research, 1981.

Assessment Handbook: A Guide for Assessing Illinois' Students. Springfield, IL: Illinois State Board of Education, 1988.

Blank, William E. *Handbook for Developing Competency-Based Training Programs.* Englewood, NJ: Prentice Hall, Inc., 1982.

Bloom, Benjamin S. *Human Characteristics and School Learning.* New York: McGraw-Hill, 1976.

Bloom, Benjamin S. *All Our Children Learning.* New York: McGraw-Hill, 1980.

Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Do a Job Analysis.* Creasaptown, MD: Western Maryland Vocational Resource Center, 1978.

Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Evaluate Students in a CBVE Program.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.

Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Write and Use Competency Profiles.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.

Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Write Performance Objectives.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.

Brannon, Donald R., Gerald F. Day, and Donald Maley. *What is Competency-Based Vocational Education (CBVE)?.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.

Carnevale, Anthony P., Leila J. Gainer, and Ann S. Meltzer. *Workplace Basics: The Essential Skills Employers Want.* Alexandria, VA: American Society for Training and Development, 1990.

Category C: Instructional Execution. Athens, GA: American Association for Vocational Instructional Materials, 1986.

Cohen, S. Alan. "Instructional Alignment: Searching for a Major Bullet." Educational Researcher. November 1987.

Competency-Based Vocational Education in North Dakota. Bismarck, ND: North Dakota Competency-Based Vocational Education Project, State Board for Vocational Education and University of North Dakota, 1983.

Course of Study Development. The Instructional Materials Laboratory, the Ohio State University, Columbus, OH: 1985.

Crossroads: A Handbook for Effective Classroom Management. Oklahoma City, OK: Oklahoma Department of Education, 1990.

Developing a Unit of Instruction. Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1985.

Developing Individualized Modules for Vocational-Technical Education. Montgomery, AL: State of Alabama Department of Education, Division of Instructional Services, 1979.

District 214 General Learner Outcomes. Township High School District 214. Arlington Heights, IL.

Douglass, Rebecca and Ruth Patton. *Task List Verification Techniques.* Springfield, IL: NNCCVTE, 1989 rev.

Educational Leadership: Learning Styles and the Brain. Alexandria, VA: Association for Supervision and Curriculum Development, Volume 48, No. 2, October, 1990.

Facilitator Training Manuals. Stillwater, OK: Instructional Services Division, Oklahoma Department of Vocational and Technical Education, n.d.

Finch, Curtis R. and John R. Crunkilton. *Curriculum Development in Vocational and Technical Education: Planning, Content, and Implementation*, Third Edition. Boston, MA: Allyn and Bacon, Inc., 1989.

Fraser, Larry, Ron Genda, Ron McKeever, and Donna Richardson. *The Vocational Educator's Guide to Competency-Based Personalized Instruction.* St. Paul, MN: Project H.O.P.E., Minnesota State Department of Education, Vocational Division, 1976.

Friedenburg, Joan E. and others. *Adapt Instruction for Limited English Proficient Vocational Students.* Module LEP 3. Columbus, OH: NCRVE, 1988.

Gindele, John F. and Joseph G. Gindele. *An Instructional Package on How to Make an Instructional Package.* Minneapolis, MN: EDU-PAC Publishing Company, 1980.

Goodlad, John. *A Place Called School: Prospects of the Future.* New York: McGraw Hill Publishing Co., 1984.

Griffin, Nancy C. and others. *How to Write Your Own Curriculum Materials.* Resource Monograph #25. Gainesville, FL: University, 1981.

Gronlund, Norman E. *Measurement and Evaluation in Teaching.* New York: Macmillan Publishing Company, 1985.

Gronlund, Norman E. *Stating Behavioral Objectives for Classroom Instruction.* New York: The Macmillan Company.

Halasz, I. and J. Desy. *Managing Learning Time: A Vocational Educator's Handbook.* Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1984.

Harrington, Lois G. *Provide Instructional Materials for CBE.* Columbus, OH: Center for Education and Training for Employment. Module K-4, 1986.

Hattaway, Brenda C. *Testing.* Bend, OR: Presentation to Northwest Conference on Competency-Based Vocational Education, October 1989.

Hoover, Kenneth H. *College Teaching Today: A handbook for Postsecondary Education.* Boston, MA: Allyn and Bacon, Inc., 1980.

Horton, John. *CBVE—What It Is and What It Isn't.* Bend, OR: Presentation to Northwest Conference on Competency-Based Vocational Education, 1989.

"Instructional Alignment." EPIEgram. Vol. 15, No. 5, 1987. pp. 4-6.

Instructional Evaluation (Category D). Columbus, OH: CETE, Ohio State University, n.d.

Instructional units developed by Instructional Services Division. Stillwater, OK: Oklahoma Department of Vocational and Technical Education, 1989.

Introduction to Competency-Based Vocational Education. Topeka, KA: State Department of Education, Division of Community Colleges and Vocational Education, n.d.

Karnes, Frances A. and Emily C. Collins. *Handbook of Instructional Resources and References for Teaching the Gifted.* 2nd ed. Boston, MA: Allyn and Bacon, Inc., 1984.

Kozak, Ellen M. *Every Writer's Guide to Copyright and Publishing Law.* New York: Henry Holt and Company, 1990.

Mager, Robert F. Developing Attitude Toward Teaching, or SMAT's 'N SMUTs. Second edition. Belmont, CA: Pittman Learning, Inc., 1984.

Mager, Robert F. and Kenneth M. Beach, Jr. *Developing Vocational Instruction.* Belmont, CA: David S. Lake Publishers, 1967.

Mager, Robert F. *Preparing Instructional Objectives.* Second edition. Belmont, CA: Fearon Publishers, 1975.

McAshan, H. H. *Writing Behavioral Objectives.* New York: Harper and Row.

McCage, Ron. *Definition of Terms.* Athens, GA: VTECs, n.d.

McCarthy, Brenda. *The 4MAT System.* Barrington, IL: Excel, Inc., 1986.

Mehrer, Ron. *Introduction to CBVE.* Bend, OR: Presentation to NWCBVE Conference, 1989.

Melnick, Steven A. and Robert K. Gable. "High School Curriculum Alignment: Much Work to be Done." *The Clearinghouse.* Feb. 1989. Vol. 62, pp. 245-249.

Neidermyer, Fred and Stephen Yelon. "Los Angeles Aligns Instruction with Essential Skills." *Educational Leadership*. May 1981. pp. 618-620.

Notes from ASCD Workshop *Dimensions of a Comprehensive Program for Teaching Thinking*. Oklahoma City, OK: 1987.

Oen, Urban T. *Construct Performance and Written Evaluation Instruments*. Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

Oen, Urban T. and David Dimmlich. *Identify Teaching/Learning Strategies and Management Techniques to Implement CBVE*. Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

Oen, Urban T. *Identify, Verify, and Sequence Job Tasks*. Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

Oen, Urban T. *Write a Student Performance Contract*. Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

Oklahoma Minimum Criteria for Effective Teaching Performance. Oklahoma City, OK: Oklahoma State Department of Education, 1986.

Onward to Excellence: Making Schools More Effective. Portland, OR: A research synthesis on effective schooling practices by Northwest Regional Educational Laboratory, 1984.

Pasch, Marvin, et. al. *Teaching Decision Making: Instructional Practices for the Successful Teacher*. New York: Longman Publishers, 1991.

Performance-Based Teacher Education Modules: Instructional Management (Category E). Second edition. Athens, GA: American Association for Vocational Instructional Materials, n.d.

Pierce, Greg. *Developing Performance-Based Test Items: A Guide for Writers*. Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1987.

Popham, W. James and Eva L. Baker. *Systematic Instruction*. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970.

Pocsi, Martha J. *Glossary from Occupational Competencies Project*. Aberdeen, NJ: New Jersey State Department of Education, Division of Vocational Education, 1990.

Powell, Cheryl R. *Competency-Based Curriculum Development Manual*. Mason City, IA: Northern Iowa Area Community College, 1987.

Pratt, David. *Curriculum Design and Development*. New York: Harcourt Brace Jovanovich, Inc., 1980.

Purcel, David J. *Performance-Based Instructional Design*. New York: McGraw-Hill, Inc., Gregg Division, 1989.

"Ralph Tyler Revisited." EPIEgram. Vol. 15, No. 5, 1987. pp. 1-3.

Ross, Novella M. "Assessing Readability of Instructional Materials." Voc. Ed. 54, #2, Feb. 1979. pp. 10-11.

Schlichting, Harley. *Curriculum Alignment.* Bend OR: Presentation to Northwest Competency-Based Conference, 1989.

Scott, Roger. "Curriculum Alignment as a Model for School Improvement." Ed. 252508. pp. 15-27.

Simon, Anita and Claudia Bryan. *You've Got to Reach'em to Teach'em.* Dallas, TX: Training Associates Press, Inc., 1984.

Skylights: A Handbook for Teaching Thinking Skills. Oklahoma City, OK: Oklahoma Department of Education, 1988.

Smith, Carole A. *Landscape Management: Field Operator.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1988.

Spady, William G. "Organizing for Results: The Basis of Authentic Restructuring and Reform." *Educational Leadership.* October 1988, pp. 4-8.

They're Trained, But Are They Employable. Alexandria, VA: Vocational Education Journal, August 1987.

Walbesser, Henry H., Edwin B. Kurtz, Larry D. Goss, and Richard M. Robl. *Constructing Instruction Based on Behavioral Objectives.*

What Works: Research About Teaching and Learning. Washington, DC: United States Department of Education, 1987.

Wood, Merle. *Developing Your Own Instructional Units.* Arlington, VA: American Vocational Association, 1980.

Competency-Based Education
Professional Development Series

Glossary

Basic skills — The academic and occupational competencies (workplace skills) needed to function in a technologically advanced society.

Note: Academic skills include reading, writing, math, and science. Workplace skills include learning to learn, listening, oral communication, creative thinking, problem solving, self esteem, motivation/goal setting, personal and career development, interpersonal relations, negotiation, teamwork, organizational effectiveness, and leadership.

Competence — Ability to perform a task to a predetermined standard.

Competency — A learned behavior which can be repeated to a predetermined standard.

Competency-based education (CBE) — A methodology of instruction that (a) identifies the cognitive, psychomotor, and affective skills needed to meet a specified standard; (b) informs students and teachers of the precise and detailed learning objectives required to achieve performance; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by allowing each student to master the task through flexibility in learning time and methods.

Competency list — List of related tasks with a corresponding rating scale.

Competency profile — Record of a student's ability to perform specified tasks.

Condition — Describes situation under which task will be performed.

Criterion-referenced evaluation — Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective.

Curriculum alignment — Agreement among the intended outcomes, instruction, and evaluation.

Duty — A group of tasks that are related to each other by the nature of the work to be performed; cluster or related tasks.

Evaluation — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives.

Grading pattern — Plan to provide feedback based on identified criteria and rationale.

Individualized instruction — Student-centered instruction in which the materials and activities are tailored to meet the needs of the individual student.

Note: This may also be referred to as personalized instruction.

Instructional analysis — Identification of sequence and strategies for instruction; also referred to as school housing and scope and sequence.

Learner outcome — Expectation of student performance upon completion of instruction.

Learning — A change in a student's behavior due to an educational experience.

Learning activity packet (LAP) — Written packet utilizing a self-instructional format which contains information on a specific topic and learning activities that lead students to specified performance outcomes.

Learning contract — An agreement between a student and a teacher which details the learning activities a student will complete in a given period of time.

Learning style — Most efficient and effective method of learning for an individual.

Occupational/program analysis — Determining duties and tasks performed in an occupation or program.

Performance objective — A statement of what the student must do in observable and measurable terms.

Note: Performance objectives are sometimes referred to as behavioral objectives.

Process evaluation — Measure of a student's ability to perform a given procedure; also a formative evaluation.

Product evaluation — Rating the product of a student's performance; also a summative evaluation

Progress chart — A form to track a student's progress through instruction.

Self-paced instruction — Process in which the student progresses at his/her own rate toward stated objectives.

Specific objective — Objective stating performance required of a student in order to reach intended outcome for a unit of instruction.

Note: Specific objectives may also be referred to as interim, enabling, subordinate, subobjective, and enroute objectives.

Standard — Criteria which specify exactly what constitutes successful completion of a prescribed performance.

Student (Learner) — One who receives instruction.

Task — Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps.

Task analysis — The identification of cognitive, psychomotor, and affective skills needed to perform a specific task.

Task list — List of related duties and tasks.

Taxonomy — System of classifying objectives into types or levels.

Examples: Bloom's Taxonomy, Snyder Taxonomy

Technical committee — A group of subject matter experts from business/industry/labor and education who identify, then verify content of materials produced during development process.

Unit objective — Statement of the intended purpose (overall behavioral outcome) expected of each student after completion of a unit of instruction or a LAP.

Unit of instruction — Materials and/or information necessary for one or more instructional periods for the teaching/learning process in order to reach the unit objective.

Competency-Based I

Planning for Competency

BEST COPY AVAILABLE

Planning For Competency-Based Education is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Planning for Competency-Based Education

Objective Sheet

Unit Objective

After completing this unit, the student should be able to develop a plan to implement competency-based education. The student should demonstrate this competency by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to competency-based education with their correct definitions.
2. Discuss the history of competency-based education.
3. State the major characteristics of a competency-based program.
4. State principles of competency-based education.
5. Select from a list advantages of competency-based education.
6. List institutions or agencies that use competency-based education concepts.
7. Distinguish between characteristics of competency-based education and traditional education.
8. State the requirements for implementing a competency-based instructional system.
9. List the steps for curriculum alignment.
10. Arrange in order the seven steps for developing a competency-based instructional system.
11. Distinguish among characteristics of competency-based education, individualized instruction, and outcome-based education.
12. Distinguish among what competency-based education means to the student, to the teacher, to the administrator, and to the employer.
13. Select statements that accurately describe competency-based education. (Assignment Sheet 1)

Objective Sheet

14. Complete a competency-based checklist for a course or program. (Assignment Sheet 2)

15. Develop a philosophy statement on competency-based education. (Assignment Sheet 3)

16. Develop a plan to implement competency-based education. (Assignment Sheet 4)

Planning For Competency-Based Education

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.

2. Review Teaching Suggestions section that follows. Plan for classroom activities.

3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.

4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.

5. Make a transparency from the transparency master included with this unit. This appears in the teacher guide only and is designed to be used with the following objective:

   TM 1—Steps for Developing Competency-Based Education (Objective 10)

6. Make copies of any handouts that you plan to distribute to students.

7. Obtain films, videotapes, posters, charts, and other items to supplement instruction of this unit.

8. Review instructions for evaluating student performance, and make copies of the Unit Evaluation Form.

Delivery and Application

9. Provide students with unit of instruction.

10. Discuss unit and specific objectives.

11. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.

12. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Suggested Activities

Evaluation

13. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

14. Make copies of the written test. Add or modify test questions as needed.

15. Give written test.

16. Compile assignment sheet ratings and written test score on the Unit Evaluation Form. Include any additional assignments.

17. Reteach and retest as required.

Teaching Suggestions

1. Find cartoons which illustrate principles of competency-based education.

2. Introduce the unit by discussing the importance of planning for CBE.

3. Explain the terminology provided in Objective 1 on the information sheet.

4. Collect examples of philosophy statements and implementation plans written by various sources.

5. Use Teacher Supplement 1 as explanation of misconceptions of CBE when discussing Objective 5.

6. Use Teacher Supplement 2 and TM 1 as further explanation when discussing Objective 10.

7. Use Assignment Sheet 1 as a pre-test/post-test in reviewing principles and concepts of CBE. The answers to this assignment sheet are based on the competency-based philosophy as described in this unit of instruction. A student's answers may differ, but be correct, depending on their philosophy towards competency-based education.

8. Use Assignment Sheet 2 to examine a course or program. Students may be assigned to examine other courses or programs to broaden their perspective of CBE.

9. Use Assignment Sheets 3 and 4 together. It is difficult to implement a plan if a student does not have a philosophy statement and goals. Have students develop a plan to implement competency-based education into an existing program. Explain that after a plan has been developed the next step will be to determine competencies and tasks.

10. Provide students with an opportunity to share their philosophy statements.

Suggested Activities

Resources Used in Developing This Unit

1. Bloom, Benjamin S. *Human Characteristics and School Learning.* New York: McGraw-Hill, 1976.
2. Bloom, Benjamin S. *All Our Children Learning.* New York: McGraw-Hill, 1980.
3. Brannon, Donald R., Gerald F. Day, and Donald Maley. *What Is Competency-Based Vocational Education (CBVE)?.* Cresaptown, MD: The Maryland Vocational Curriculum Production Project, Western Maryland Vocational Resource Center, 1978.
4. *Competency-Based Vocational Education in North Dakota.* Bismarck, ND: North Dakota Competency-Based Vocational Education Project, State Board for Vocational Education and University of North Dakota, 1983.
5. Fraser, Larry, Ron Genda, Ron McKeever, and Donna Richardson. *The Vocational Educator's Guide to Competency-Based Personalized Instruction.* St. Paul, MN: Project H.O.P.E., Minnesota State Department of Education, Vocational Division, 1976.
6. Horton, John. *CBVE—What It Is And What It Isn't.* Presentation to Northwest Conference on Competency-Based Vocational Education in Bend, Oregon, 1989.
7. *Introduction to Competency-Based Vocational Education.* Topeka, KA: State Department of Education, Division of Community Colleges and Vocational Education, n.d.
8. McCage, Ron. *Definition of Terms.* Athens, GA: VTECs, n.d.
9. Mehrer, Ron. *Introduction to CBVE.* Presentation to NWCBVE Conference in Bend, Oregon, 1989.
10. Pocsi, Martha J. *Glossary from Occupational Competencies Project.* Aberdeen, NJ: New Jersey State Department of Education, Division of Vocational Education, 1990.
11. Spady, William G. "Organizing for Results: The Basis of Authentic Restructuring and Reform:" *Educational Leadership*, October 1988, p. 4-8.

Planning For Competency-Based Education

Answers to Assignment Sheets

Assignment Sheet 1

1. Yes.
2. No, the *student* is more accountable because he or she knows from the start what must be done.
3. No, the emphasis is on learning activities and practice to acquire competence.
4. No, while some group instruction with lecture and demonstration may still occur, individualized instruction and active student involvement are the primary elements.
5. Yes.
6. No, the word *generally* is key here. CBE emphasizes the *directly relevant* information—the "must know" rather than the "nice to know".
7. No, the student performance is evaluated against stated criteria or standards; students are not compared to other students.
8. Yes.
9. Yes.
10. No, the phrase "over a specified period of time" makes this statement false.
11. Yes.
12. Yes.
13. Again, the phrase "over a specified period of time" makes this statement false.
14. Yes.
15. Yes.

Assignment Sheet 2

The answers will depend on the course or program being examined. All yes answers would indicate the course or program is competency-based.

Answers to Assignment Sheets

Assignment Sheet 3

Philosophy statement should support competency-based education principles and be no more than 50 words in length. Philosophy statement should be broad and goal statements more specific.

Assignment Sheet 4

Purpose of the assignment is to develop a written plan of operation that can be implemented. Plan should support philosophy statement developed in Assignment Sheet 3.

Planning For Competency-Based Education

Answers to Written Test

1.

a.	9	f.	7
b.	2	g.	3
c.	1	h.	10
d.	4	i.	8
e.	5	j.	6

2. Answer should include at least five of the following:

   a. WW II—Emphasis on effective training
   b. '50s and '60s—Systems approach
   c. '60s—Behavioral instruction
   d. '63—John Carroll's research on student learning concluded that learning is determined by time needed vs. time allowed
   e. '60s—Student centered curriculum
   f. '60s—Benjamin Bloom's model of school learning
   g. '60s and '70s—James Block's, Benjamin Bloom's model for mastery learning
   h. '70s and '80s—Research into effective teaching/learning
   i. '80s—"Excellence" movement
   j. '80s and '90s—Learning style research, brain research, etc.
   k. '90s—Workplace and basic academic skills; outcome-based education

3. Answer should include:

   a. Course content is based on an occupational/program analysis.
   b. Student performance objectives are specified in advance of instruction.
   c. An instructional delivery system is used that allows for individualization, feedback, flexibility, and reteaching.
   d. A criterion-referenced evaluation system is used to measure a student's competency level.

4. Answer should include any four of the following:

   a. Any student in a training program can perform most tasks at a high level of mastery if provided with quality instruction and sufficient time.
   b. A student's ability to learn a task need not predict how well the student learns the task.
   c. Individual student differences in levels of mastery of a task are more frequently caused by inadequacies in the learning environment rather than by characteristics of the student.
   d. Most students become very similar to one another in learning ability, rate of learning, and motivation for learning when provided with favorable learning conditions.

Answers to Written Test

e. Educators should focus more on differences in learning and less on differences in learners.
f. The most important element in the teaching/learning process is the kind and quality of instruction experienced by students.

5. a, b, d, e, g, h, j

6. Answer should include five of the following:

   a. Elementary and secondary schools
   b. Colleges and universities
   c. Technical institutes
   d. Vocational-technical centers
   e. All military branches
   f. Business, industry, and labor training programs
   g. Government agencies
   h. Licensing and certifying bodies

7. a. T
   b. C
   c. C
   d. T
   e. T
   f. C
   g. C
   h. T
   i. C
   j. T
   k. T
   l. C
   m. C
   n. T
   o. C
   p. T

8. Answer should include:

   a. Commitment from administration, teachers, parents, and advisory committee
   b. Written plan of operation
   c. Competent teachers
   d. Adequate facilities and equipment
   e. Instructional materials
   f. Professional development for teachers

9. Answer should include:

   a. Determine intended outcomes.
   b. Develop instructional strategies that teach toward outcomes.
   c. Evaluate the same learner outcomes.

10. a. 3
    b. 6
    c. 1
    d. 7
    e. 2
    f. 5
    g. 4

Answers to Written Test

11.	a.	C	e.	I		
	b.	I	f.	C		
	c.	C	g.	I		
	d.	O				
12.	a.	T	f.	T	k.	A
	b.	T	g.	E	l.	S
	c.	A	h.	S	m.	T
	d.	S	i.	S		
	e.	S	j.	S		

Planning For Competency-Based Education

Written Test

Name ______________________________ Score ______________

1. Match the terms on the right with their correct definitions.

______a. One who receives instruction

______b. A methodology of instruction that (a) identifies cognitive, psychomotor, and affective skills needed; (b) informs students and teachers of the precise and detailed learning objectives required to achieve performance; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by allowing each student to master the task through flexibility in learning time and methods

______c. A learned behavior which can be repeated to a predetermined standard

______d. A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

______e. A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

______f. A statement of what the student must do in observable and measurable terms

______g. Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

______h. Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

1. Competency
2. Competency-based education
3. Criterion-referenced evaluation
4. Duty
5. Evaluation
6. Occupational/ Program analysis
7. Performance objective
8. Standard
9. Student
10. Task

Written Test

______i. Criteria which specify exactly what constitutes successful completion of a prescribed performance

______j. Determining duties and tasks performed in an occupation or program

2. Discuss the history of competency-based education.

   Note: Include at least five major events.

3. State the major characteristics of a competency-based program.

   a. ______

   b. ______

   c. ______

   d. ______

Written Test

4. State four principles of competency-based education.

a. ____

____

b. ____

____

c. ____

____

d. ____

____

5. Select from the following list advantages of competency-based eduction by placing an "X" next to the correct advantages.

______a. Provides a skilled worker/learner upon completion of the course or program

______b. Allows teacher to function as a manager and resource person

______c. Lowers standards because it allows too many people to get A's

______d. Gives student credit for prior knowledge

______e. Allows student to advance at his/her own pace within the program guidelines

______f. Forces all students into the same mold

______g. Promotes action-oriented instruction

______h. Provides for greater accountability of the teacher and student

______i. Forces teachers to use completely new teaching skills

______j. Provides for efficient use of facilities and equipment

______k. Allows teacher to be eliminated from the teaching/learning process

Written Test

6. List five institutions or agencies that use competency-based education concepts.

a. ____

b. ____

c. ____

d. ____

e. ____

7. Distinguish between characteristics of competency-based education and traditional education by placing a "C" next to competency-based education descriptors and a "T" next to the traditional education descriptors.

______a. Content is global and may or may not pertain to performance of a specific task or tasks.

______b. Content is based on knowledge required to perform a specific task or tasks.

______c. Specific tasks identified—can track performance and allow more or less time depending on student capabilities.

______d. Hard to control lab experiences since specific tasks not well defined

______e. Business, industry, labor, and/or advisory committee members not always sure of what goes on in program and may not feel like they are contributing force in the school

______f. Business, industry, labor, and/or advisory committee members can specifically identify what program is covering. Through review of the task list they can contribute specific information on their needs.

______g. Tasks and performance standards required by employers are identified; therefore, the instructional program is more effective in meeting employer's need for skilled employees.

______h. Specific requirements of task performance are not always well identified; therefore, instructional efforts may not produce skilled employees.

______i. Standard or criteria for identifying competent task performance described for student information and performance evaluation

Written Test

______j. Standard or criteria of acceptable performance not clear to students. May not be consistent across students.

______k. Primarily written tests

______l. Combination written, performance, work habits, and attitude, objectively defined.

______m. Student knows what tasks are to be performed, how well they are to be performed, and what they will be able to do upon completion of the course or program.

______n. Student does not always know what is expected relative to quantity or quality of performance.

______o. Since instructional program is developed around a task or group of tasks, "nice to know" information is minimal thus increasing the emphasis on the "must know." This allows more time for practice.

______p. Differentiation between "nice to know" and "must know" not always clear. Can lead to wasted time and money.

8. State the requirements for implementing a competency-based instructional system.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

f. ______________________________

9. List the steps for curriculum alignment.

a. ______________________________

b. ______________________________

c. ______________________________

Written Test

10. Arrange in order the seven steps for developing a competency-based instructional system. Write a "1" for the first step, a "2" for the second step, and so on.

_______a. Develop a written plan.

_______b. Manage the learning environment.

_______c. Develop a philosophy.

_______d. Evaluate and revise the system.

_______e. Define terms.

_______f. Organize instructional resources.

_______g. Determine competencies and tasks.

11. Distinguish among characteristics of competency-based education, individualized instruction, and outcome-based education by placing a "C" next to competency-based education characteristics, an "I" next to individualized instruction characteristics, and an "O" next to outcome-based education characteristics.

_______a. Level of performance is clearly specified

_______b. Instruction is learner-centered

_______c. Student verifies his/her learning by demonstrating competencies

_______d. Curriculum is developed to achieve exit outcomes student is expected to demonstrate

_______e. Overall goal of instruction is to meet individual learner needs and to provide for individual differences

_______f. Student does not complete curriculum until he/she has demonstrated the minimum competencies

_______g. Instruction provides the student with alternatives from which he/she may select learning activities adaptable to his/her learning style

Written Test

12. Distinguish among what competency-based education means to the student, to the teacher, to the administrator, and to the employer by placing an "S" next to student descriptors, a "T" next to teacher descriptors, an "A" next to administrator descriptors, and an "E" next to employer descriptors.

_______a. Being allowed to become a facilitator of learning

_______b. Being allowed to concentrate on student motivation

_______c. Accommodating community educational needs for retraining and updating

_______d. Having a choice in how she/he will learn

_______e. Being given credit for what he/she already knows

_______f. Being able to work alone with individual students in order to design a personalized curriculum

_______g. Assuring qualifications of prospective employees

_______h. Being able to proceed at her/his own rate within program guidelines

_______i. Accepting more responsibility for his/her own learning

_______j. Competing against pre-set standards and not other students

_______k. Making articulation of secondary, postsecondary, and part-time adult instruction easier to accomplish

_______l. Being graded on achievement of standards or criteria for each segment of the curriculum

_______m. Being the key element in the teaching/learning process

***Permission to duplicate this test is granted.**

Planning For Competency-Based Education

Unit Evaluation Form

Student Name ______________________ Unit Rating __________

Assignment Sheet 1—Select Statements That Accurately Describe Competency-Based Education Rating ______

Comments: ______________________________

____

Assignment Sheet 2—Complete a Competency-Based Checklist For Your Course or Program Rating ______

Comments: ______________________________

____

Assignment Sheet 3—Develop a Philosophy Statement on Competency-Based Education Rating ______

Comments: ______________________________

____

Assignment Sheet 4—Develop a Plan to Implement Competency-Based Education Rating ______

Comments: ______________________________

____

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ______________________________

____

Teacher Signature ______________________ Date __________

Student Signature ______________________ Date __________

***Permission to duplicate this form is granted.**

43

Planning For Competency-Based Education

Learning Steps

Name ______________________________

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives

______ 2. **Do** Assignment Sheet 1—Select Statements That Accurately Describe Competency-Based Education, pp. 13 and 14.

______ 3. **Stop** Turn in completed assignment sheet to teacher. You will have an opportunity to review the assignment sheet in step 7.

______ 4. **Study** Information Sheet, Objectives 1 through 12, pp. 3-12.

______ 5. **Do** Assignment Sheet 2—Complete a Competency-Based Checklist for Your Course or Program, pp. 15-17.

______ 6. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 7. If evaluation is not satisfactory, repeat steps 1 through 5.

______ 7. **Do** Have teacher return Assignment Sheet 1. Review your answers and make any desired changes.

______ 8. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 9. If evaluation is not satisfactory, repeat steps 4, 5, and 7.

______ 9. **Do** Assignment Sheet 3—Develop a Philosophy Statement on Competency-Based Education, pp. 19 and 20.

______ 10. **Stop** Have teacher evaluate completed assignment sheet. If satisfactory, continue to step 11. If not satisfactory, repeat steps 4 and 9.

______ 11. **Do** Assignment Sheet 4—Develop a Plan to Implement Competency-Based Education, pp. 21-24.

______ 12. **Stop** Have instructor evaluate completed assignment sheet. If satisfactory, continue to step 13. If not satisfactory, repeat steps 4 and 11.

______ 13. **Take** Written test. (See teacher) If your score is 85 percent or above, continue to step 14. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______ 14. **Sign** Unit evaluation form to verify ratings received on assignment sheets and written test.

***Permission to duplicate this form is granted.**

Planning For Competency-Based Education

Teacher Supplement 1—Misconceptions and Concerns of CBE

Even though CBE is certainly not the answer to *all* educational problems, many criticisms and doubts about CBE are based on simple misunderstandings. The following information outlines some of the common complaints about CBE.

1. ***With so much emphasis on individualized instruction, each student is isolated in the instructional process.*** Rather than causing isolation, CBE presents more opportunity to interact with other students and the teacher (through one-to-one situations and small-group settings) than does the conventionally-structured classroom.

2. ***CBE is dehumanizing.*** Instruction which is not competency-based is often more dehumanizing. When students are taught as a group in a traditional program their individual needs often cannot be met. Conventional grading systems encourage students to compete against one another, making slower students feel inadequate and fall further behind. Sometimes even the most able students are held back from achieving their full potential in group-oriented instruction.

   CBE considers each student's needs and goals, provides more time and assistance which is necessary to achieve success, and minimizes feelings of failure and frustration.

3. ***CBE forces all students into the same mold.*** In a sense, everyone in a CBE program becomes alike in that all students are required to achieve the same minimum competencies. But these competencies are the very ones workers say are required for success on the job. Beyond these basic and minimal skills and abilities, however, students may choose to specialize, develop particular job skills further, and study some topics in greater depth. Thus, once students advance beyond the entry-level requirements, they may choose where they want to go from there.

4. ***CBE lowers standards because it allows too many people to get A's.*** Grades do tend to be higher in CBE programs when compared to traditional programs. However, this is mainly because CBE lets students know where they are going, thus improving their motivation and achievement. Many teachers maintain that standards are raised, not lowered. Objectives are specified in terms of performance and students are evaluated according to specific criteria. Furthermore, CBE is more consistent with the sound philosophy of education that all students achieve according to their highest potential given the correct conditions.

5. ***You give away what will be on the test when you let students know the exact evaluative procedures and items in advance. You are just teaching the test.*** In CBE, you do not teach in preparation for the test but for the skills the test will require. One principle of CBE is that testing should not be a psychological game in which the students try to outguess the teacher. A student who knows exactly how to perform for success is more likely to learn and perform efficiently. Criterion-referenced measures encourage the teacher to pinpoint the essential learning toward which to direct instruction. From the student's point of view, less time is wasted studying nonessential information. The student can evaluate personal progress toward the standards.

6. ***CBE will not work in all program areas of education.*** For some courses, to specify expected precise student outcomes and to direct instruction toward the desired student performances is more difficult than others. Any course worth teaching, however, is also worth the effort to measure its success. To measure student learning, precise performances and standards of quality are needed. All programs should have measurable competencies. Fortunately for educators, most courses can be converted to competency-based instruction. Curriculum catalogs, guides, and other resources go a long way toward helping to establish CBE programs by eliminating a tremendous amount of groundwork which would otherwise have to be done by teachers.

7. ***CBE calls for individualized instruction. One teacher cannot provide adequate supervision for students working on diverse learning tasks in a variety of locations, sometimes using dangerous equipment or materials.*** Wherever individualized programs have been tried, most students have adapted very quickly to a more independent learning style. There are many techniques to assist the teacher with individualized instruction. The more advanced and the more responsible students can assist the teacher by tutoring and supervising other students as they work independently or in small groups. In some situations, paraprofessionals or teacher aides may be employed to assist with supervision and recordkeeping. It should be pointed out, however, that CBE programs will not be totally individualized. There will be group activities in the classroom.

8. ***Teachers need completely new skills to teach using CBE.*** Although some new teacher roles and skills may be required, teachers currently have most of the skills necessary to adopt the approach. All that is needed is time, training, and a positive attitude for teachers to be comfortable with using CBE.

9. ***CBE is too academic and places too much emphasis on reading.*** Historically, reading has been a problem in education. What better way for a person to improve their reading skills than through CBE. Instructional materials should be at the appropriate reading level so as to make students want to read. Although non-reading methods of teaching can be employed in a CBE program, it is better to assist students in the development of reading skills.

Teacher Supplement 1

10. ***CBE seems like a lot of paperwork for the teacher and students.*** Depending on what instructional materials a teacher uses, paperwork may be increased or decreased. However, CBE will organize instruction so much better that it is worth the effort. Students themselves can help in the control of paperwork if the instructional program is well designed. Since student outcomes and learning activities are written, there is no confusion on what and how a student is to learn.

11. ***CBE is just another name for minimal competency testing.*** Although testing is an important element of a CBE program, the end result is not just being able to pass a test. The instructional process and being taught how to learn is just as important, if not more important, as showing that one possesses the skills, attitudes, or knowledge of a work activity. CBE is not just a series of tests, but a total instructional system.

12. ***CBE is just another fad.*** Elements of CBE such as job analysis, performance objectives, student competency sheets, and individualized instruction have been around a long time. However, they have never been really implemented in the classroom. CBE is not a revolutionary fad, but the result of good educational practices which have evolved throughout the years.

13. ***The teacher is eliminated from the teaching-learning process.*** The teacher is the key to any instructional process. CBE does not eliminate the teacher, but his or her role is changed. As has been said, the teacher is more of a facilitator, motivator, and manager of instruction in CBE.

***Permission to duplicate this form is granted.**

Planning For Competency-Based Education

Teacher Supplement 2—Seven Steps for Developing a Competency-Based Instructional System

Steps	Comments
1—Develop a Philosophy	Although a philosophy is usually a brief statement of beliefs about the purpose of the school, it is well to involve participants in a discussion of what is meant by it. Discussion should be held on how students learn, and the role of the student, the teacher, and the school. What are the aims and purposes of the school. The philosophy should represent a statement of what the school hopes to become. This should include a statement of goals for the district.
2—Define Terms	A consistent usage of terms is needed for successful communication among participants in a curriculum effort. It will be necessary to define terms which will be necessary ingredients of the desired system. For example, what do terms, open ended, open entry, mean in an applied setting? Differences should be resolved in favor of creating successful communications. Also, the goals stated in Step One, should be defined.
3—Develop a Plan	Given basic beliefs and goals of a philosophy and the communications ability of consistent terminology, a plan of the system should be designed. This will establish the basic guidelines for your system. How does the system work, how does a student pass through it, what is the role of the teacher, and what are the support systems necessary for success. It is at this point that roadblocks should be assessed and realistic determinations made about how to proceed.
4—Determine Competencies and Tasks	The learning content for each program should be determined. What are learning requirements for successful completion? What legal concerns and traditional requirements must be met by the program? Which skills are best learned on the job, which in school?
5—Organize Instructional Resources	Identify needed resources such as facilities, equipment, supplies, and other instructional materials. Determine modes of instruction, large groups, small groups, individual. Determine methods of instruction to be used. Prepare audio visual aids, printed instructional materials and other printed reference. Determine alternative strategies for individual differences and alternate learning methods. Which are most difficult, which are easiest? In what order are they best learned?
6—Manage the Learning Environment	Prepare for management of the system. Make checklists and forms for recordkeeping. Make schedules to regulate flow of students. Prepare instructions for students. Arrange for orientation, monitoring, providing individual help, and evaluation of learning. The heart of the individualized approach is to assess, diagnose, and prescribe for learning.
7—Evaluate and Revise the System	It is unlikely that any instructional system will be faultless in design through implementation. Evaluate the system in terms of its ability to meet goals. Does it accomplish the aim? Determine how unforeseen problems can be made consistent with the overall goals of the system. Don't be afraid to change. Re-evaluate the original steps in light of new information.
*For use at State, District, School, or Program level.	

***Permission to duplicate this form is granted.**

Steps For Developing a Competency-Based Instructional System

1. **Develop a philosophy.**
2. **Define terms.**
3. **Develop a written plan.**
4. **Determine competencies and tasks.**
5. **Organize instructional resources.**
6. **Manage the learning environment.**
7. **Evaluate and revise the system.**

Planning For Competency-Based Education

Information Sheet

1. **Terms and definitions**

   a. **Competency** — A learned behavior which can be repeated to a predetermined standard.

   b. **Competency-based education (CBE)** — A methodology of instruction that (a) identifies cognitive, psychomotor, and affective skills needed to meet a specified standard; (b) informs students and teachers of the precise and detailed learning objectives required to achieve performance; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by allowing each student to master the task through flexibility in learning time and methods

   c. **Criterion-referenced evaluation** — Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

   d. **Duty** — A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

   e. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

   f. **Student (Learner)** — One who receives instruction

   g. **Occupational/Program analysis** — Determining duties and tasks performed in an occupation or program

   h. **Performance objective** — A statement of what the student must do in observable and measurable terms

      Note: Performance objectives are sometimes referred to as behavioral objectives.

   i. **Standard** — Criteria which specify exactly what constitutes successful completion of a prescribed performance

   j. **Task** — A unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

Information Sheet

2. **History of competency-based education**
    a. WWII — Emphasis on effective training
    b. '50s and '60s — Systems approach
    c. '60s — Behavioral instruction
    d. '63 — John Carroll's research on student learning concluded that learning is determined by time needed vs. time allowed
    e. '60s — Student centered curriculum
    f. '60s — Benjamin Bloom's model of school learning

    Note: Bloom's model had three factors affecting outcomes: (1) attitude at beginning of instruction, (2) level of mastery of prerequisite task or tasks, and (3) quality of instruction used.

    g. '60s and '70s — James Block's, Benjamin Bloom's model for mastery learning
    h. '70s and '80s — Research into effective teaching/learning
    i. '80s — "Excellence" movement
    j. '80s and '90s — Learning style research, brain research, etc.
    k. '90s — Workplace and basic academic skills; outcome-based education

3. **Major characteristics of a competency-based program**
    a. Course content is based on an occupational/program analysis.
    b. Student performance objectives are specified in advance of instruction.
    c. An instructional delivery system is used that allows for individualization, feedback, flexibility, and reteaching.
    d. A criterion-referenced evaluation system is used to measure a student's competency-level.

4. **Principles of competency-based education**

    Note: These principles are based on Bloom's model for mastery learning.

    a. Any student in a training program can perform most tasks at a high level of mastery if provided with quality instruction and sufficient time.

Information Sheet

b. A student's ability to learn a task need not predict how well the student learns the task.

c. Individual student differences in levels of mastery of a task are more frequently caused by inadequacies in the learning environment rather than by characteristics of the student.

d. Most students become very similar to one another in learning ability, rate of learning, and motivation for learning when provided with favorable learning conditions.

e. Educators should focus more on differences in learning and less on differences in learners.

f. The most important element in the teaching/learning process is the kind and quality of instruction experienced by students.

5. **Advantages of competency-based education**

   a. Allows student to advance at his/her own pace within the program guidelines

   b. Allows teacher to function as a manager and resource person

   c. Promotes action-oriented instruction

   d. Provides for more efficient use of facilities and equipment

   e. Gives student credit for prior knowledge

   f. Provides for greater accountability of the teacher and the student

   Note: The student becomes responsible for his/her learning. Objectives are identified at beginning of instruction.

   g. Provides a skilled worker/learner upon completion of the course or program

   h. Facilitates site-based management

   i. Allows for programs to articulate based on identified objectives

6. **Institutions or agencies that use competency-based education concepts**

   a. Elementary and secondary schools

   b. Colleges and universities

   c. Technical institutes

Information Sheet

d. Vocational-technical centers

e. All military branches

f. Business, industry, and labor training programs

g. Government agencies

h. Licensing and certifying bodies

7. Characteristics of competency-based education and traditional education

Criteria	Competency-based	Traditional
Content	Task based, Fixed — Content is based on knowledge required to perform a specific task or tasks.	Teacher Preference, Variable — Content is global and may or may not pertain to performance of a specific task or tasks.
Practice Time	Specific tasks identified — can track performance and allow more or less time depending on student capabilities.	Hard to control lab experiences since specific tasks not well defined.
Describing Competency	Standard or criteria for identifying competent task performance described for student information, and performance evaluation.	Standard or criteria of acceptable performance not clear to students. May not be consistent across students.
Grading	Combination written, performance, work habits, and attitude, objectively defined.	Primarily written tests
Efficiency	Since instructional program is developed around a task or group of tasks, "nice to know" information is minimal thus increasing the emphasis on the "must know." This allows more time for practice, which is the primary determinant of skill level developed.	Differentiation between "nice-to-know" and "must know" not always clear. Can lead to wasted time and money, both taxpayer and student.
Effectiveness	The tasks and performance standards required by employers are identified; therefore, the instructional program is more effective in meeting employers' needs for skilled employees.	Specific requirements of task performance are not always well identified; therefore, instructional efforts may not produce skilled employees.
Student Acceptance	Student knows what tasks are to be performed, how well they are to be performed, and what they will be able to do upon completion of the course or program.	Student does not always know what is expected relative to quantity or quality of performance.
Employer Support	Business, industry, labor, and/or advisory committee members can specifically identify what the program is covering. Through review of the task list they can contribute specific information on their needs.	Business, industry, labor, and/or advisory committee members not always sure of what goes on in the program and may not feel like they are a contributing force in the school.

Information Sheet

8. **Requirements for implementing a competency-based instructional system**

    a. Commitment from administration, teachers, parents, and advisory committee

    Note: There must be a commitment to provide quality education for students. This commitment should show a desire to provide students with valid skills; a realization that the development and management of a competency-based instructional system is going to take time and effort; a willingness to accept assistance and advice from colleagues who have had success with the system; and a determination that you can and will make the system work.

    b. Written plan of operation

    Note: Develop a philosophy statement and a plan to show how the competency-based process is to work.

    c. Competent teachers

    Note: All that is needed is time and education for teachers to be comfortable in a competency-based instructional system. The positive attitude of the teacher is very important to make the system work.

    d. Adequate facilities and equipment

    e. Instructional materials

    f. Professional development for teachers

    Examples: Inservice education, preservice education

9. **Steps for curriculum alignment**

    a. Determine intended outcomes.

    Examples: Duty, tasks, competencies

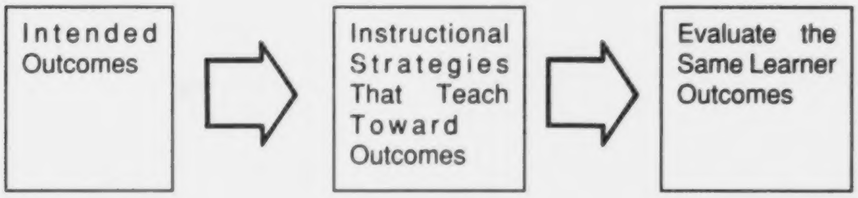
    b. Develop instructional strategies that teach toward outcomes.

    Example: Select instructional materials, determine teaching method

Information Sheet

c. Evaluate the same learner outcomes.

Examples: Criterion-referenced tests, performance tests


Intended Outcomes
Instructional Strategies That Teach Toward Outcomes
Evaluate the Same Learner Outcomes

10. **Seven steps for developing a competency-based instructional system**

a. Develop a philosophy.

Note: A brief statement of the beliefs about the purpose of the competency-based instructional system.

b. Define terms.

Note: A consistent usage of terms is needed for successful communication.

c. Develop a written plan.

Note: This will establish the basic guidelines for your competency-based instructional system.

d. Determine competencies and tasks.

Note: The learning content for each program should be determined.

e. Organize instructional resources.

Note: Identify needed resources, determine methods of instruction, and determine alternative strategies.

f. Manage the learning environment.

Note: Prepare for management of the system. Assess, diagnose, and prescribe for learning.

g. Evaluate and revise the system.

Note: It is unlikely that any instructional system will be faultless in design through implementation. Evaluate the system in terms of its ability to meet goals. Don't be afraid to change.

Information Sheet

11. Characteristics of competency-based education, individualized instruction, and outcome-based education

a. Competency-based education

Note: Competency-based curriculum can be described as "what is to be learned." The terms "competency-based" and "performance based" describe a curriculum that identifies what the student must do to successfully function in a specific job or occupation.

- Level of performance is clearly specified
- Student verifies his/her learning by demonstrating competencies

  Note: Competencies include cognitive, psychomotor, and affective behaviors.

- Competencies are "minimum" performance requirements
- Student does not complete curriculum until he/she has demonstrated the minimum competencies

  Note: Competency profile may become his/her transcript when seeking employment or advancement.

- Instruction may be delivered in a traditional group setting or in an "individualized" or "personalized" system

b. Individualized instruction

Note: Individualized instruction can be described as "how it is to be learned." The terms "individualized" and "personalized" are often used interchangeably. Some have misconstrued these terms to mean only independent study.

- Instruction is learner-centered
- Overall goal of instruction is to meet individual needs and to provide for individual differences
- Basic premise is that students learn different "things" at different rates, at different times, and by different methods
- Instruction provides the student with alternatives from which he/she may select learning activities adaptable to his/her learning style
- Course or program length depends upon time required for student to demonstrate competencies rather than on an arbitrary pre-set time limit

Information Sheet

c. Outcome-based education

Note: This is based on Spady's outcome-based paradigm.

- Exit outcomes reflect emphasis on the broad opportunities and challenges students will face when they leave school
- Visionary exit outcomes are designed with the intent that all students will ultimately be able to demonstrate them successfully

  Note: Exit outcomes are usually designed for grades, class, school, district, or state.

- Curriculum is developed to achieve exit outcomes student is expected to demonstrate
- Key operational principles include:
  - Clarity of focus on outcomes

    Note: Students should know what the goals of their learning experiences are, what criteria will be used to assess their performance on those goals, and where they stand in relation to each of these goals.

  - Expanded opportunity and instructional support

    Note: Place emphasis on what student can demonstrate rather than when the demonstration takes place.

  - High expectations for learning success

    Note: Bloom's assertion is that learning results are a direct reflection of both teacher expectations and the instructional practices that embody and reinforce them.

12. What competency-based education means

a. To the student, CBE means

- Being given credit for what he/she already knows
- Being able to proceed at his/her own rate within program guidelines

Information Sheet

- Having a choice in how he/she will learn

  Examples: Individually on a one-to-one basis, in small groups, in large groups, or through audiovisual means

- Accepting more responsibility for his/her own learning
- Competing against preset standards and not other students
- Being graded on achievement of standards or criteria for each segment of the curriculum

b. To the teacher, CBE means

- Being allowed to become a facilitator of learning

  Note: The teacher becomes more of a motivator and manager of the learning process rather than a "giver-of-all-information."

- Being allowed to concentrate on student motivation

  Note: The teacher may concentrate on instilling confidence in the learner and providing rewards for jobs well done, while serving as a model of desirable work habits, attitudes, and competency in the occupational field.

- Being able to work alone with individual students in order to design a personalized curriculum
- Continuing to be the key element in the teaching/learning process

c. To the administrator, CBE means

- Using instructional staff, instructional equipment, and buildings more efficiently
- Accepting students with a wide variety of entry-level skills
- Making articulation of secondary, postsecondary, and part-time adult instruction easier to accomplish
- Making evaluation of program effectiveness and instructional staff easier

Information Sheet

- Accommodating community educational needs for retraining and updating
- Increasing opportunities to work cooperatively with business, industry, and labor
- Demonstrating accountability to the community more easily

d. To the employer, CBE means

- Having determined the skills of prospective employees
- Accomplishing retraining and updating of employees more quickly and easily
- Assuring qualifications of prospective employees
- Having a record of prospective employee's skills

Planning For Competency-Based Education

Assignment Sheet 1—Select Statements That Accurately Describe Competency-Based Education

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Followed directions	______
Checked eight statements	______

Directions: Listed below are 15 statements. Place a check mark in the blank before each of the EIGHT statements that accurately describe CBE.

______ 1. CBE is an instructional system designed to improve education.

______ 2. CBE is a system in which the teacher is held most accountable for a student's performance.

______ 3. CBE emphasizes testing and de-emphasizes instruction.

______ 4. CBE emphasizes group instruction based on lecture and demonstration activities.

______ 5. CBE is an instructional program in which performance objectives are made known to a student in advance of instruction.

______ 6. CBE emphasizes the generally related knowledge and hands-on skills associated with a specific occupation.

______ 7. CBE holds a student accountable for achieving passing grades when compared to the other students in the program.

______ 8. CBE places emphasis on exit requirements of a program or course.

______ 9. CBE holds the student accountable for attaining a given competency level.

______10. CBE is a system that recognizes that most students will learn over a specified period of time.

______11. CBE provides for frequent and/or immediate feedback to students.

______12. CBE holds performance standards constant but allows time and learning methods to vary.

Assignment Sheet 1

______13. CBE is a system that ensures that most students will be employable at the end of a specified period of time.

______14. CBE is based on performance objectives derived from an occupational/program analysis.

______15. CBE requires the teacher to perform differently than he or she would in a traditional instructional program.

Planning For Competency-Based Education

Assignment Sheet 2—Complete a Competency-Based Checklist for a Course or Program

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Followed directions	______
Every question has an appropriate response	______

Directions: Complete the following checklist for a course or program. Place a check mark in the blank for the appropriate response.

Course/Program Name ______________________________

	Yes	**Moving Toward**	**No**
1. Competencies are based on role-relevant skills validated by professionals within the field			
• Is there a competency or task list that has been verified for the program by representatives of business, industry, and labor?	______	______	______
• Is the competency or task list verified at least every five years?	______	______	______
• Are performance objectives for each competency written in measurable terms?	______	______	______
• Are performance objectives stated in cognitive, affective, and psychomotor domains?	______	______	______
• Is the competency or task list provided to the learner prior to instruction?	______	______	______
2. Criterion-referenced measures are used to determine level of competence.			
• Is there a criterion-referenced measure for each verified competency?	______	______	______

Assignment Sheet 2

	Yes	Moving Toward	No
• Is learner achievement and performance based on standards rather than comparison with the performance of other learners?	______	______	______
• Does the criterion-referenced measure test performance of the skill, knowledge or attitude as stated in the performance objectives?	______	______	______
• Are the criterion-referenced testing conditions the same as stated in the performance objectives?	______	______	______
• Are the learners required to perform tasks in a manner similar to performance by incumbents in the occupation for which the learner is receiving training?	______	______	______
3. **A system exists for documenting competencies completed by the learner**			
• Is there a documentation system for tracking learner performance of competencies in the program, course, or unit?	______	______	______
• Does the documentation system include each of the following items?			
— Profile title?	______	______	______
— List of competencies completed?	______	______	______
— Date of demonstrated competence?	______	______	______
— Rating scale or checklist for each completed competency?	______	______	______
• Is the documentation used for achievement records, employer information, and reports to parents?	______	______	______
• Is the document listing the competencies completed provided to each learner when he/she exits the program?	______	______	______

Assignment Sheet 2

4. **The instructional delivery system is structured to provide for differences in learner characteristics and abilities**	**Yes**	**Moving Toward**	**No**
• Are the instructional materials based on competencies?	______	______	______
• Is there provision for individualized learning opportunities and enrichment activities for each learner as evidenced by the use of learning modules, assignment sheets, and/or learning activity packets?	______	______	______
• Is there provision for immediate feedback or correction?	______	______	______
• Is a variety of learning activities and resources utilized?	______	______	______
• Is there provision to allow learners to proceed at their own rate?	______	______	______
• Are learners required to demonstrate each competency?	______	______	______
• Is there a system in place to allow learners to bypass instruction by demonstrating prior knowledge of competencies associated with that instruction?	______	______	______
• Is the system for converting performance to a grading scale in place and known to the learners?	______	______	______

Planning For Competency-Based Education

Assignment Sheet 3—Develop a Philosophy Statement on Competency-Based Education

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Philosophy statement supports competency-based education principles	_____
Goals provide direction for achieving philosophy statement	_____

Each school district, school, department, and program should have a philosophy statement. This states what education is, and what it does for students. A philosophy is necessary when planning any type of instruction. If you are planning a competency-based instructional system, your philosophy must reflect a commitment to this approach. All levels within the school must work together in the development of a philosophy. Involve others in a discussion of:

- What is meant by competency-based education?
- How do students learn?
- What is the role of the student? the teacher? the administrator? parents? employers?
- What are the aims and purposes?
- What is the end result you want to achieve?

Example: Philosophy Statement: To effectively and efficiently develop mutually needed instructional materials based on a competency-based format.

Goals:

(1) Instructional materials are based on a verified occupational/program analysis.

(2) Performance objectives are stated at the beginning of each unit of instruction.

(3) Content is developed that supports and reinforces performance objectives.

(4) Criterion-referenced assignment sheets, job sheets, and written test measure individual's mastery of performance objectives.

Assignment Sheet 3

Directions: Develop a brief philosophy statement on competency-based education. The philosophy statement should be no more than 50 words in length. Include a list of goals to achieve your philosophy statement.

Planning For Competency-Based Education

Assignment Sheet 4—Develop a Plan to Implement Competency-Based Education

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Systematic approach was used in developing plan	______
Plan supports competency-based principles	______
Plan can be implemented	______

Before beginning this assignment sheet, you should have (1) developed a philosophy statement on competency-based education and (2) defined terms needed for successful communication when implementing the desired competency-based instructional system.

Given basic beliefs and goals of a philosophy and the communications ability of consistent terminology, a plan of the competency-based instructional system should be designed. This will provide the basic guidelines for your system.

In the development of an instructional system, it is wise to design a plan before starting to work on the finished product. The following is a description of such a plan.

The basic plan of an instructional system is likely to be somewhat theoretical in concept. The purpose of such a plan is to test reality to see if the system is operable. It should show how the pieces must be developed to make the instructional system function as well as how the pieces fit together.

There are at least two ways to develop a plan in organizing an instructional system:

1. A narrative description can be written depicting in detail how the instructional and learning processes take place as a student moves through the system being planned.
2. A flow chart of the type used by systems design people can be used to graphically illustrate the steps, components, decision points, and alternatives available or needed in the system.

Of primary importance, however, is the plan's ability to lay out the requirements of the system which will affect the demands to be made upon administration, staff, facilities, students, and special resources.

Assignment Sheet 4

If there is no hope of being able to obtain all the resources required by the plan, an alteration of the plan would be wise. The development of a plan presents the opportunity for a somewhat realistic analysis of demands and limitations to be confronted and provides the communication vehicle for explaining the instructional system to staff, students, and interested others.

Note: To administrators: Your plan is the guideline for your staff and students in using competency-based, individualized instruction. It must be flexible enough to allow for individual creativity. However, it should provide a broad format to be used by the district, school, department, and program. This system assures students that they will be able to move from teacher to teacher, class to class, and department to department, without an entirely new orientation to the overall system. This, of course, cannot be accomplished if an individual program is developing the system apart from the rest of the school.

A. Directions: Developing a plan is a total educational process that involves the relationship of staff, budget, facilities, students, extracurricular activities, and instructional materials. Using the information presented in this unit and your personal experiences, answer the following questions:

1. How does the student move through the system? ____________________

   ____

   ____

   ____

2. Is there a standardized format for learning materials? ________________

   ____

   ____

   ____

3. What type of media equipment will be available? ____________________

   ____

   ____

   ____

Assignment Sheet 4

4. What methods of instruction will be used? ______________________

5. What is the role of the administrator? ______________________

6. What is the role of the teacher? ______________________

7. What is the role of the student? ______________________

8. What is the role of support services? ______________________

9. How will the student be evaluated? ______________________

Assignment Sheet 4

10. How will records be kept? ______

______

______

______

11. What will the grading system be? ______

______

______

______

12. How will the system be evaluated? ______

______

______

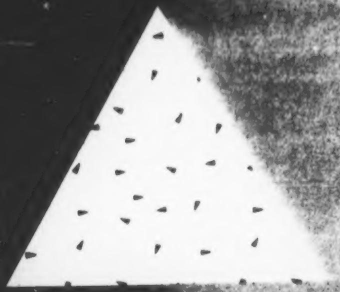
______

B. Directions: Develop a plan to implement competency-based education. Be sure to show in detail how the instructional process takes place as the student moves through the system.

Note: Remember that you are developing a "plan" and that several alterations will be necessary as you strive to achieve your goals and philosophy.

Competency-Based Education

Ali [illegible] Curriculum



Aligning Curriculum is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Aligning Curriculum

Objective Sheet

Unit Objective

After completing this unit, the student should be able to align intended outcomes, instructional materials, and test items with each other. The student should demonstrate these competencies by completing the assignment sheets and by scoring 85 percent on the written test.

Specific Objectives

1. Match terms related to aligning curriculum with their definitions.
2. List steps in the curriculum alignment concept.
3. Select from a list advantages of curriculum alignment.
4. State problems to overcome in curriculum alignment.
5. Arrange in order steps for curriculum alignment.
6. Select characteristics of a program description.
7. List sources of curriculum materials.
8. Arrange in order procedures for completing a task analysis for a program or course.
9. State reasons for verifying a task list.
10. Select from a list benefits of involving business, industry, and labor in curriculum development.
11. Match techniques to verify or validate task lists with their descriptions.
12. List ways to sequence tasks.
13. Arrange in order steps in conducting an instructional analysis.
14. List reasons to adapt or revise instructional materials.
15. Discuss ways to adapt instructional materials.
16. State suggestions for aligning performance and written evaluations

Objective Sheet

17. Determine a program or course description. (Assignment Sheet 1)

18. Locate sources of curriculum materials. (Assignment Sheet 2)

19. Verify a task list. (Assignment Sheet 3)

20. Sequence tasks. (Assignment Sheet 4)

21. Evaluate existing instructional materials. (Assignment Sheet 5)

22. Select instructional materials based on a verified or validated task list. (Assignment Sheet 6)

23. Complete a checklist for aligning test items. (Assignment Sheet 7)

Aligning Curriculum

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.

2. Review Teaching Suggestions section that follows. Plan classroom activities.

3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.

4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.

5. Make transparencies from transparency masters included with this unit. These appear in the teacher edition only and are designed to be used with the following objectives:

   TM 1—To Attain Reliable Instructional Accomplishments . . . We Move From This Situation . . . (Objective 2)
   TM 2—To This . . . (Objective 2)
   TM 3—What's Worth Teaching? (Objectives 2-5)
   TM 4—Program: Hospitality and Tourism (Objective 12)

6. Make copies of any handouts that you plan to distribute to students.

7. Obtain films, videotapes, posters, charts, and other items to supplement instruction of this unit.

8. Review instructions for evaluating student performance, and make copies of the Unit Evaluation Form.

Delivery and Application

9. Provide students with unit of instruction.

10. Discuss unit and specific objectives.

11. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.

12. Discuss assignment sheets. Review criteria for evaluation of these activities.

Suggested Activities

Evaluation

13. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

14. Make copies of written test. Add or modify test items as needed.

15. Give written test.

16. Compile assignment sheet ratings and written test score on the Unit Evaluation Form. Include any additional assignments.

17. Reteach and retest as required.

Teaching Suggestions

1. Collect a variety of task lists for students to reference in completing this unit of instruction.

   Examples: Competency profiles, performance standards, course descriptions

2. Use TM 1 and TM 2 when teaching Objective 2. These transparencies illustrate curriculum misalignment and curriculum alignment. This is a way to visualize what we are moving towards. There are circles representing intended outcomes, instruction, and evaluation. When these are moved together we see they are not the same size. The intended outcomes represent our list of what is most important to teach the students. We do not have to teach the whole universe of instructional intents. Therefore, this circle is smaller. We can test a reasonable sample of those things to find out how we are doing, therefore the evaluation circle is smaller. Instruction should give the students the opportunity to learn all of the intentions we have for student achievement, but it should do more than that. That is why the instruction circle is bigger.

3. Use TM 3 to summarize Objectives 2 through 5. If the material is worth taking the time to teach and the student to learn, it should be evaluated.

4. If students have not obtained a validated task list, you may want to use Teacher Supplement 1 as an example when teaching Assignment Sheets 3 and 4. Have students go through the process of verifying the duties and tasks of a vocational-technical education teacher. Students could also sequence the tasks.

5. Teacher Supplement 2 could be used as an illustration of how a duty and task are broken down and conditions and standards established as you discuss Objective 8.

Suggested Activities

6. Teacher Supplement 3 could be used as an example of classifications and definitions of academic and workplace skills. According to the 1991 Federal Vocational and Technical Education Legislation, teachers must integrate and reinforce basic academic skills into their instructional process. Many states have developed student learner outcomes or task lists for the basic academic skills. The tasks listed and the way they are identified or defined will vary from state to state.

7. TM 4 may be used when discussing Objective 12 and Assignment Sheets 3 and 4. In the past, educators identified all the tasks necessary with the occupation. All students were forced to attempt the tasks. Past practices have shown that only the average and above average will succeed to master all the tasks. Others will give up or drop out. In order to increase the mastery of all students, you should identify job titles for the following reasons:

    a. Students who wish to only complete a segment of the program can do so and then exit the program for employment.

    b. Others in the community can access your program more easily to only learn a small segment.

    c. The program will be training students for actual jobs in the community.

    d. Special needs students can specialize in one or two spin-off areas which meet their needs, interests, and abilities. They can usually master these rather than be forced through the entire curriculum where more often than not, they will fail or drop out.

    e. The program can usually respond to quickly changing technologies of business, industry, or labor, thereby adding or deleting job titles more readily.

Resources Used in Developing This Unit

1. Appleby, Judith A. *Conducting Task Analyses and Developing Instructional Objectives.* Module 8. Springfield, IL: American Institute for Research, 1981.

2. *Assessment Handbook: A Guide for Assessing Illinois' Students.* Springfield, IL: Illinois State Board of Education, 1988.

3. Blank, William E. *Handbook for Developing Competency-Based Training Programs.* Englewood, NJ: Prentice Hall, Inc., 1982.

4. Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Do a Job Analysis.* Cresaptown, MD: The Maryland Vocational Curriculum Production Project, 1978.

Suggested Activities

5. Cohen, S. Alan. "Instructional Alignment: Searching for a Major Bullet." Educational Researcher. November 1987.

6. *Course of Study Development.* The Instructional Materials Laboratory, the Ohio State University, Columbus, OH: 1985.

7. *District 214 General Learner Outcomes.* Township High School District 214. Arlington Heights, IL.

8. Douglass, Rebecca and Ruth Patton. *Task List Verification Techniques.* Springfield, IL: NNCCVTE, 1989 rev.

9. Facilitator training manuals. *Curriculum Alignment.* Stillwater, OK: Oklahoma Department of Vocational and Technical Education, Instructional Services Division, n.d.

10. Finch, Curtis R. and John R. Crunkilton. *Curriculum Development in Vocational and Technical Education: Planning, Content, and Implementation.* Inc. 3rd ed. Boston, MA: Allyn and Bacon, 1989.

11. Friedenburg, Joan E. and others. *Adapt Instruction for Limited English Proficient Vocational Students.* Module LEP 3. Columbus, OH: NCRVE, 1988.

12. Griffin, Nancy C. and others. *How to Write Your Own Curriculum Materials.* Resource Monograph #25. Gainesville, FL: University, 1981.

13. Harrington, Lois G. *Provide Instructional Materials for CBE.* Columbus, OH: Center for Education and Training for Employment. Module K-4, 1986.

14. "Instructional Alignment." EPIEgram. Vol. 15, No. 5, 1987. p. 4-6.

15. Karnes, Frances A. and Emily C. Collins. *Handbook of Instructional Resources and References for Teaching the Gifted.* 2nd ed. Boston, MA: Allyn and Bacon, Inc., 1984.

16. Melnick, Steven A. and Robert K. Gable. "High School Curriculum Alignment: Much Work to be Done." *The Clearinghouse.* Feb. 1989. Vol. 62, p. 245-249.

17. Niedermeyer, Fred and Stephen Yelon. "Los Angeles Aligns Instruction with Essential Skills." *Educational Leadership.* May 1981. p. 618-620.

18. Oen, Urban T. *Identify, Verify, and Sequence Job Tasks.* Addison, IL: Demonstration Center CIVE Project, 1985.

19. Popham, W. James and Eva L. Baker. *Systematic Instruction.* Englewood Cliffs, NJ: Prentice Hall, Inc., 1970.

Suggested Activities

20. Pratt, David. *Curriculum Design and Development.* New York, NY: Harcourt Brace Jovanovich, Inc., 1980.

21. "Ralph Tyler Revisited." EPIEgram. Vol. 15, No. 5, 1987. p. 1-3.

22. Ross, Novella M. "Assessing Readability of Instructional Materials." *Voc. Ed.* 54, #2, Feb. 1979. p. 10-11.

23. Schlichting, Harley. *Curriculum Alignment.* Bend, OR: Presentation to Northwest Competency-Based Conference, 1989.

24. Scott, Roger. "Curriculum Alignment as a Model for School Improvement." Ed. 252508. p. 15-27.

Suggested Supplemental Resources

1. Douglass, Rebecca. *Task List Verification Using Structured Group Interview Technique.* Springfield, IL: Beckwood, Inc.

2. Brochures and resources from NNCCVTE.

3. Cohen S. Alan. "Instructional Alignment: Searching for a Magic Bullet." *Educational Researcher.* November 1987.

   Note: This paper describes results of alignment studies that have dramatic implications for researchers and practitioners.

Aligning Curriculum

Answers to Assignment Sheets

Assignment Sheet 1

1. Possible answer would include supervisor or administrator.

2. Possible questions to ask may include:

   Do you have a program description? Are there any objectives or purposes already developed for the program? Are there any limitations or constraints on what can be taught? Has any time completion constraints been placed on the program such as one or two years? Do you have copies of advisory committee minutes?

3. Program description is attached.

4. Possible comments may include the following characteristics:

   It should be one to two paragraphs in length for each job title or major area. It should define the entire scope of the course or program. It should include the various duties involved and list any special or unusual conditions under which those duties will be carried out. It should identify the tools and equipment needed. It should identify the training needed. It should include whether a license or certification is needed.

Assignment Sheet 2 — Student performance should be evaluated according to the criteria stated.

Assignment Sheet 3

Step 1: Answers should include structured group interview, program advisory committee, worker survey, worker interview, or a combination of techniques.

Step 2: Occupations or major area should be identified. Spin-off levels when students could leave program should also be identified.

Step 3: Duties and tasks should be identified and should be measurable and observable.

Step 4: All answers should be yes. If not, have student explain why. Statements address the three areas of the taxonomy of objectives.

Assignment Sheets 4, 5, 6, and 7 — Student performance should be evaluated according to the criteria stated.

Aligning Curriculum

Answers to Written Test

1. a. 12
   b. 3
   c. 11
   d. 6
   e. 1
   f. 7
   g. 8
   h. 14
   i. 2
   j. 13
   k. 5
   l. 4
   m. 10
   n. 9

2. a. Determine intended outcomes.
   b. Develop instructional strategies that teach toward outcomes.
   c. Evaluate the same learner outcomes.

3. b, c, e, f

4. Any three of the following:

   a. Various types of instructional materials do not coordinate with each other.
   b. Textbooks often do not match identified competencies.
   c. Standardized tests do not consistently measure predetermined competencies.
   d. Teachers become frustrated when objectives, instruction, and evaluation cannot be aligned.

5. a. 8
   b. 3
   c. 9
   d. 1
   e. 7
   f. 2
   g. 4
   h. 6
   i. 5

6. b, c, d, f, g

7. Answer should include any six of the following:

   a. Commercial sources
   b. National sources
   c. Professional associations
   d. University resources
   e. State resources
   f. Locally produced resources
   g. Materials from businesses, government agencies, community entities
   h. Persons with expertise in a particular area
   i. Professional publications, theses, dissertations
   j. Magazines, newspapers, periodicals

8. a. 6
   b. 2
   c. 3
   d. 8
   e. 1
   f. 7
   g. 4
   h. 5

Answers to Written Test

9. Answer should include any four of the following:

   a. Identifies tasks affected by local codes and regulations
   b. Notes unique procedures used by local firms
   c. Results in greater confidence in the task list
   d. Identifies "missed" tasks and clarifies meanings
   e. Increases public relations benefits by including more people in the analysis

10. All are correct

11. a. 3
    b. 2
    c. 1
    d. 4

12. a. State the basic task first before the more complex tasks.
    b. Sequence the tasks in the order you want the students to learn them.
    c. Group related tasks so they can be learned in a fixed order.

13. a. 6 e. 3
    b. 2 f. 1
    c. 7 g. 5
    d. 4

14. Answer may include any six of the following:

    a. Modify the content to match the tasks and/or performance objectives.
    b. Involve students as active participants in their own learning processes.
    c. Capitalize on the diversities and complexities existing in any given classroom.
    d. Make teaching more effective for a teacher and more efficient for a learner.
    e. Apply to different learning levels.
    f. Involve the kind of mental operations that lead to a clearer interpretation and understanding.
    g. Meet description of target population.
    h. Utilize current information.
    i. Supplement textbook.
    j. Eliminate biases found in resources.
    k. Accommodate variables that have impact on the instructional process.

15. Discussion may be in student's own words, but should address the following:

    a. Select segments of materials from various sources to reinforce the learning of the objective.
    b. Use only parts of materials that are appropriate to instruction.
    c. Select a variety of materials to reinforce the objective.
    d. Modify test to accommodate student's abilities.

Answers to Written Test

16. Answer should include two of the following for each item:

    a. Performance evaluation

    - Evaluation should assess the task as it is stated.
    - The behavior called for in the performance objective should be the same as required for the performance evaluation.
    - If a process is to be evaluated, criteria or standards must be included that assess how the student performs the task.
    - If a product is to be evaluated, product-related criteria or standards must be included.
    - If both process and product are important, include items to evaluate both.

    b. Written evaluation

    - Test items should be written to match the level as stated in the performance objective.
    - Test items should measure the student's mastery of the key concepts or facts covered in the scope of the task itself.
    - Each test item should stand alone.

Aligning Curriculum

Written Test

Name ______________________________ Score ____________

1. Match terms related to aligning curriculum with their definitions.

______a. A unit of work with a definite beginning and ending which is measurable and observable

______b. Describes situation under which task will be performed

______c. Criteria which specifies exactly what constitutes successful completion of a prescribed performance

______d. A group of tasks that are related to each other by the nature of the work to be performed

______e. A learned behavior which can be repeated to a predetermined standard

______f. A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

______g. Expectation of student performance upon completion of instruction

______h. A group of subject matter experts from business/industry/labor and education who identify, then verify, content of materials produced during the development process

______i. List of related tasks with a corresponding rating scale

______j. List of related duties and tasks

______k. Agreement among the intended outcomes, instruction, and evaluation

1. Competency
2. Competency list
3. Condition
4. Criterion-referenced evaluation
5. Curriculum alignment
6. Duty
7. Evaluation
8. Learner outcome
9. Occupational/ Program analysis
10. Performance objective
11. Standard
12. Task
13. Task list
14. Technical committee

Written Test

______l. Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

______m. A statement of what the student must do in observable and measurable terms

______n. Determining duties and tasks performed in an occupation or program

2. List steps in the curriculum alignment concept.

a. ____

b. ____

c. ____

3. Select from a list advantages of curriculum alignment by placing an "X" on the blank before each advantage.

______a. Evaluates students according to ability of other students in same program

______b. Clarifies the objectives of the program

______c. Provides information for planning instruction for each program and for meeting school and district objectives

______d. Varies instruction so all students are not accountable for same objectives

______e. Promotes the more effective use of instructional materials

______f. Provides a system of accountability at all levels

4. State three problems to overcome in curriculum alignment.

a. ____

____

b. ____

____

c. ____

____

Written Test

5. Arrange in order steps for curriculum alignment. Write a "1" for the first step, a "2" for the second step, and so on.

______a. Implement into instructional process.

______b. Develop, adopt, or adapt a valid task list.

______c. Review evaluation data and revise where necessary.

______d. Determine program or course description.

______e. Develop, adopt, or adapt criterion-referenced test items.

______f. Identify sources of task lists.

______g. Identify sources of instructional materials.

______h. Identify sources of criterion-referenced test items.

______i. Complete an instructional analysis.

6. Select characteristics of a program description by placing an "X" on the blank before each characteristic.

______a. Should be no more than one paragraph in length for each major area or job title

______b. Should define the entire scope of the program or course

______c. Should include the various duties involved

______d. Should list any special or unusual conditions under which duties will be carried out

______e. Should state the teacher preference in learning styles

______f. Should identify the tools and equipment needed

______g. Should include whether a license or certification is needed

7. List six sources of curriculum materials.

a. ____

b. ____

Written Test

c. ____

d. ____

e. ____

f. ____

8. Arrange in order procedures for completing a task analysis for a program or course. Write a "1" for the first procedure, a "2" for the second procedure, and so on.

______a. Sequence tasks.

______b. Verify task list at local level.

______c. Determine standards for each task.

______d. Verify task list in a timely manner.

______e. Obtain a validated task list.

______f. Submit validated task list to administration for approval.

______g. Determine conditions under which tasks should be performed.

______h. Identify knowledge and attitudes student must obtain to successfully complete task.

9. State four reasons for verifying a task list.

a. ____

b. ____

c. ____

d. ____

10. Select from a list benefits of involving business, industry, and labor in curriculum development by placing an "X" on the blank before each benefit.

______a. Assures validity of task list to be used in development process

______b. Provides greater accountability

Written Test

______c. Provides opportunities for technical assistance through the use of information, references, illustrations, and/or equipment

______d. Results in an improved educational program

11. Match techniques to verify or validate task lists on the right with their descriptions.

______a. A developed questionnaire is mailed to a representative sample of incumbent workers employed in the identified occupation or content area

______b. Group that meets for the purpose of reviewing the task list to verify or validate tasks that could be added, deleted, or modified

______c. Group meeting involving incumbent workers or content specialists employed in the job for which the tasks are being verified

______d. The tasks performed in a given occupation or content area are determined by following, observing, and interviewing a sample of workers on the job

1. Structured Group Interview (SGI)
2. Program Advisory Committee (PAC)
3. Worker survey
4. Worker interview

12. List ways to sequence tasks.

a. ____

____

b. ____

____

c. ____

____

Written Test

13. Arrange in order steps in conducting an instructional analysis. Write a "1" for the first step, a "2" for the second step, and so on.

    _____a. Write related topics beside each task.

    _____b. Determine cognitive content needed for each task.

    _____c. Use accurate instructional information to ensure the best possible instructional planing.

    _____d. Identify elements from the affective domain such as work habits, attitudes, safety judgements, and personal relationships needed for each task performance.

    _____e. Determine related technical content from other disciplines needed to perform task.

    _____f. Analyze each task to determine information needed.

    _____g. Identify tools, equipment, and work aides listed in conditions that are necessary to perform task.

14. List six reasons to adapt or revise instructional materials.

    a. ______________________________

    b. ______________________________

    c. ______________________________

    d. ______________________________

    e. ______________________________

    f. ______________________________

15. Discuss ways to adapt instructional materials.

    ____

    ____

    ____

    ____

Written Test

16. State suggestions for aligning performance and written evaluations.

    a. Performance evaluation

       (1) ______________________________

       ____

       (2) ______________________________

       ____

    b. Written evaluation

       (1) ______________________________

       ____

       (2) ______________________________

       ____

*Permission to duplicate this test is granted.**

Aligning Curriculum

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Determine a Program or Course Description Rating _____

Comments: ____

____

Assignment Sheet 2—Locate Sources of Curriculum Materials Rating _____

Comments: ____

____

Assignment Sheet 3—Verify a Task List Rating _____

Comments: ____

____

Assignment Sheet 4—Sequence Tasks Rating _____

Comments: ____

____

Assignment Sheet 5—Evaluate Existing Instructional Materials Rating _____

Comments: ____

____

Assignment Sheet 6—Select Instructional Materials Based on a Verified or Validated Task List Rating _____

Comments: ____

____

Assignment Sheet 7—Complete a Checklist for Aligning Test Items Rating _____

Comments: ____

____

Unit Evaluation Form

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ____

____

Teacher Signature ______________________ Date __________

Student Signature ______________________ Date __________

***Permission to duplicate this form is granted.**

Aligning Curriculum

Learning Steps

Name ______________________________________

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Study** Information Sheets, Objectives 1 through 6, pp. 3-6, and Student Supplement 1—Aligning Instructional Materials, pp. 15-18.

______ 3. **Do** Assignment Sheet 1—Determine a Program or Course Description, pp. 35 and 36.

______ 4. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 5. If evaluation is not satisfactory repeat steps 1 through 4.

______ 5. **Study** Information Sheet, Objective 7, p. 7, and Student Supplement 2—Sources of Curriculum Materials, pp. 19-24.

______ 6. **Do** Assignment Sheet 2—Locate Sources of Curriculum Materials, pp. 37 and 38.

______ 7. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 8. If evaluation is not satisfactory, repeat steps 5 through 7.

______ 8. **Study** Information Sheets, Objectives 8 through 12, pp. 8-10, Student Supplement 3—Questions to Ask at a Task Analysis Meeting, pp. 25-28, and Student Supplement 4—Hints for Developing Duty and Task Statements, pp. 29-31.

______ 9. **Do** Assignment Sheet 3—Verify a Task List, pp. 39-41, and Assignment Sheet 4—Sequence Tasks, pp. 43 and 44.

______10. **Stop** Ask teacher to evaluate completed assignment sheets. If evaluation is satisfactory, continue to step 11. If evaluation is not satisfactory, repeat steps 8 through 10.

______11. **Study** Information Sheets, Objectives 13 through 15, pp. 10-13, and Student Supplement 5—Hints for Evaluating Existing Materials, p. 33.

Learning Steps

______12. **Do** Assignment Sheet 5—Evaluate Existing Instructional Materials, pp. 45-48, and Assignment Sheet 6—Select Instructional Materials Based on a Verified or Validated Task List, p. 49.

______13. **Stop** Ask teacher to evaluate completed assignment sheets. If evaluation is satisfactory, continue to step 14. If evaluation is not satisfactory, repeat steps 11 through 13.

______14. **Study** Information Sheet, Objective 16, pp. 13 and 14.

______15. **Do** Assignment Sheet 7—Complete a Checklist for Aligning Test Items, pp. 51 and 52.

______16. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 17. If evaluation is not satisfactory, repeat steps 14 through 16.

______17. **Take** Written Test. (See teacher) If your score is 85 percent or above, continue to step 18. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______18. **Sign** Unit Evaluation Form to verify ratings received on assignment sheets and written test scores.

***Permission to duplicate this form is granted.**

Aligning Curriculum

Teacher Supplement 1—North Dakota Validated Task List For Vocational-Technical Education

A. Planning the Vocational-Technical Program

1. Establish a rationale for the program.
2. Organize a program advisory committee.
3. Maintain a program advisory committee.
4. Develop program goals and objectives.
5. Obtain occupational analyses that are appropriate to the program.
6. Adapt occupational analyses to conform to program goals and objectives.
7. Plan the program course of study utilizing appropriate statewide curriculum guide.
8. Develop long range program plans.
9. Evaluate program effectiveness.
10. Assist with computer follow-up study.

B. Utilizing Curriculum Assistance

1. Request assistance from the North Dakota Vocational Curriculum Library.
2. Request assistance from the State Liaison Representative of the National Network for Curriculum Coordination in Vocational-Technical Education.
3. Request assistance from the National Center for Research in Vocational-Technical Education.
4. Request assistance from the North Dakota State Film Library.
5. Request assistance from the North Dakota Statewide Curriculum Project.
6. Request assistance from commercial publishers.
7. Request assistance from state/federal government agencies.
8. Request assistance from professional associations.

9. Request assistance from private non-profit service organizations.
10. Request assistance from private businesses.
11. Request an Educational Resources Information Center (ERIC) search.
12. Request a Vocational Education Curriculum Materials (VECM) search.

C. Preparing for Instruction

1. Develop a program of instruction for each course.
2. Develop units of instruction.
3. Develop lesson plans.
4. Select instructional materials.
5. Prepare teacher-made instructional materials.
6. Adapt instructional materials to fit local program needs.

D. Implementing Instructional Strategies

1. Organize field trips.
2. Monitor group discussions.
3. Monitor panel discussions.
4. Utilize brainstorming techniques.
5. Utilize peer teaching.
6. Utilize simulation techniques.
7. Direct student self study.
8. Direct student laboratory experience.
9. Assist students in applying problem solving techniques.
10. Assist students in applying decision making techniques.
11. Utilize the project method.

Teacher Supplement 1

12. Introduce a lesson.
13. Summarize a lesson.
14. Use oral questioning techniques.
15. Use positive reinforcement techniques.
16. Use instructional techniques that allow for individual differences.
17. Demonstrate a manipulative skill.
18. Demonstrate a concept/principle.
19. Individualize instruction.
20. Employ the team teaching approach.
21. Utilize subject matter experts.
22. Prepare a bulletin board.
23. Use models.
24. Use real objects.
25. Use overhead projection.
26. Use opaque projection.
27. Use filmstrips/slides.
28. Use 16mm film.
29. Use audio recordings.
30. Use video recordings.
31. Use programmed instruction.
32. Use chalkboard.
33. Use flipchart.
34. Use role playing.

35. Use telecommunications systems.
36. Use electronic instructional systems.
37. Use computer-aided instruction.

E. Evaluating Instruction

1. Establish student performance criteria in the cognitive (knowledge) domain.
2. Establish student performance criteria in the affective (attitudes) domain.
3. Establish student performance criteria in the psychomotor (skills) domain.
4. Assess student performance in the cognitive domain.
5. Assess student performance in the affective domain.
6. Assess student performance in the psychomotor domain.
7. Track student progress.
8. Determine student grades.
9. Report student progress.
10. Self-evaluate instructional effectiveness.

F. Managing the Instructional Environment

1. Project instructional resource needs.
2. Inventory department equipment/supplies.
3. Assist in the budgeting process.
4. Submit required reports/records.
5. Recommend facility improvements.
6. Maintain a filing system.
7. Provide for student safety.
8. Provide for first aid needs of students.

9. Assist students in developing self-discipline.
10. Organize the vocational laboratory.
11. Manage the vocational laboratory.
12. Maintain a resource library.

G. Performing Guidance Activities

1. Gather student data.
2. Utilize conference techniques.
3. Provide information on educational and career opportunities.
4. Assist students in applying for employment.
5. Assist students in applying for further education.
6. Refer students to others for specialized assistance.
7. Assist students in making class selection choices.

H. Performing School/Community Relations Activities

1. Develop a school/community relations plan for the program.
2. Give informative/promotional presentations.
3. Develop promotional print media.
4. Develop promotional displays
5. Prepare news articles/releases.
6. Arrange for radio presentations.
7. Arrange for television presentations.
8. Conduct an open house.
9. Assist students to be ambassadors for the program.
10. Cooperate in providing services/products for community betterment activities.

Teacher Supplement 1

I. Advising a Vocational Student Organization

1. Establish a vocational student organization.
2. Prepare vocational student organization members for leadership roles.
3. Assist in developing and financing an annual program of activities.
4. Supervise activities of a vocational student organization.
5. Guide student participation in a vocational student organization.
6. Assist with state/regional/national organizing/supervising.
7. Integrate vocational student organization activities with the program curriculum.

J. Coordinating Cooperative Education Activities

1. Establish guidelines for cooperative education.
2. Manage admission, attendance, transfer, and termination of cooperative education students.
3. Secure off-campus training sites.
4. Develop written agreements with training sites.
5. Develop written student training plans.
6. Place students in off-campus sites.
7. Assist off-campus site supervisors to be effective trainers.
8. Coordinate on-the-job instruction with classroom instruction.
9. Assist on-the-job supervisors to evaluate student progress.
10. Provide feedback to student on employer evaluation.
11. Supervise an employer-employee appreciation activity.

K. Performing Professional Growth Activities

1. Develop an active personal philosophy of education.
2. Become involved in professional association activities.

Teacher Supplement 1

3. Participate in inservice activities.
4. Supervise student teachers.
5. Maintain local/state certification requirements.

Validated June 19, 1989

Aligning Curriculum

Teacher Supplement 2—Example of Duty/Task Worksheet

Duty: F. Shampooing and Rinsing Hair

Task: F-1 Give plain shampoo

Steps in Performing Task	Conditions	Standard	Reference for Standards
1. Seat patron comfortably. 2. Select and arrange required materials. 3. Wash and sanitize hands. 4. Drape patron. 5. Ask patron to remove neck or ear jewelry and glasses. 6. Remove all hair pins from hair. 7. Examine conditions of patron's hair and scalp. 8. Brush hair thoroughly. 9. Adjust shampoo cape over back of shampoo chair. 10. Adjust volume and temperature of water spray. 11. Wet hair thoroughly. 12. Apply shampoo. 13. Give manipulations. 14. Rinse hair thoroughly. 15. Apply shampoo again. 16. Rinse hair thoroughly. 17. Partially towel dry hair.	Given needed equipment and supplies and provided with a patron.	a. Patron is satisfied. b. Oil and soil are removed from hair. c. Soap curds are removed from hair. d. Process completed in approximately 5 minutes	Van Dean Manual

Sources Consulted

The Van Dean Manual--1974
(pp. 43-45)

Standard Textbook of Cosmetology--1972
(pp. 45-47)

***Permission to duplicate this supplement is granted.**

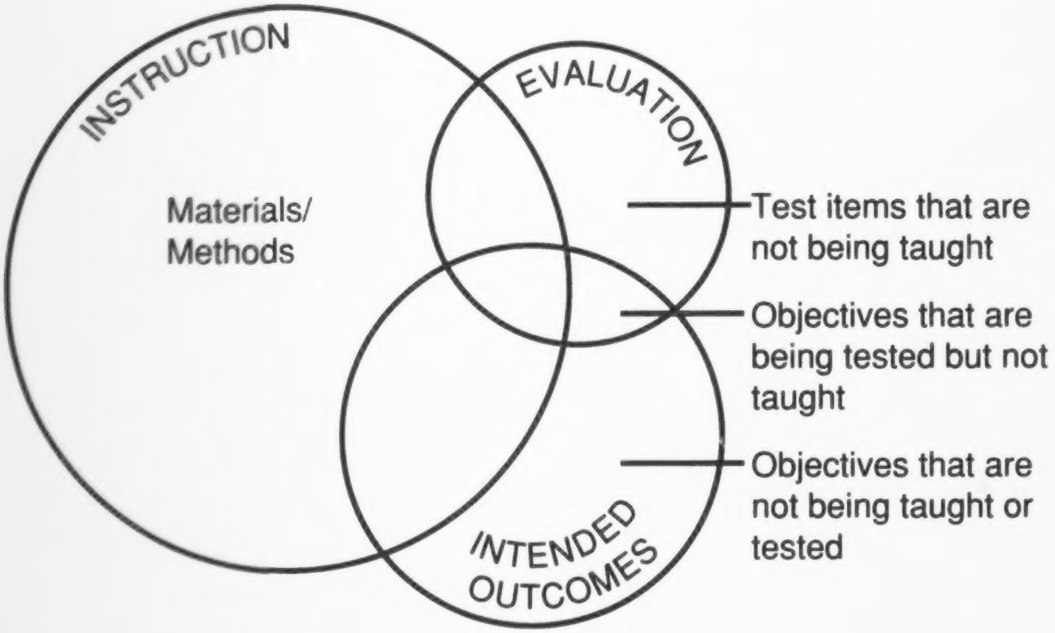
Aligning Curriculum

Teacher Supplement 3—MAVCC's Academic and Workplace Skills (Classifications and Definitions)

Skill Groups	**Sub Skills**	**Definitions**
Learning Skills	Learning to learn	Developing ability to apply knowledge to other situations; knowing how to learn.
Foundation Skills	Reading	Comprehending written information and analyzing, summarizing, and applying what has been read to a specific task.
	Writing	Communicating a thought, idea or fact in written form in a clear, concise manner.
	Math	Applying computation skills such as reasoning, estimation, and problem solving as they are actually used on the job.
	Science	Applying knowledge learned through study or practice that is based on scientific principles as they relate to specific tasks.
Communication Skills	Listening	Listening for content, conversation, long-term contexts, emotional meaning, and directions.
	Oral communication	Communicating a thought, idea, or fact in spoken form in a clear, concise manner.
Adaptability Skills	Creative thinking	Using imagination to create something new—i.e. an idea, invention, work of art.
	Problem solving (critical thinking)	Recognizing and defining problems, inventing, and implementing solutions, and tracking and evaluating results.
Personal Management Skills	Self-esteem	Developing self-confidence and creating a positive self-image.
	Motivation/goal setting	Setting and meeting defined goals and objectives.
	Personal and career development	Emphasizing self-direction by establishing and implementing a plan.
Group Effectiveness Skills	Interpersonal relations	Developing ability to maintain positive relations with others.
	Negotiation	Resolving conflict between two or more individuals.
	Teamwork	Working together in a group to reach a common goal.
Influence Skills	Organizational effectiveness	Adapting to the organization's goals, values, culture, and traditional modes of operation.
	Leadership	Directing/influencing group in performance of a specific task; accepting responsibility for others.

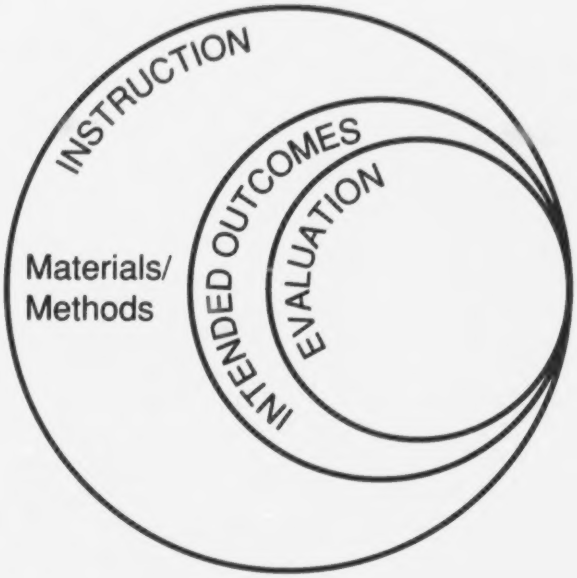
***Permission to duplicate this supplement is granted.**

To Attain Reliable Instructional Accomplishments . . . We Move From This Situation . . .


INSTRUCTION
Materials/ Methods
EVALUATION
INTENDED OUTCOMES
Test items that are not being taught
Objectives that are being tested but not taught
Objectives that are not being taught or tested

To This . . .

Students are tested on what they are expected to learn, and what they are expected to learn is included in the instruction they receive.


INSTRUCTION
INTENDED OUTCOMES
EVALUATION
Materials/
Methods

Achieving Curriculum Alignment

What's worth teaching?

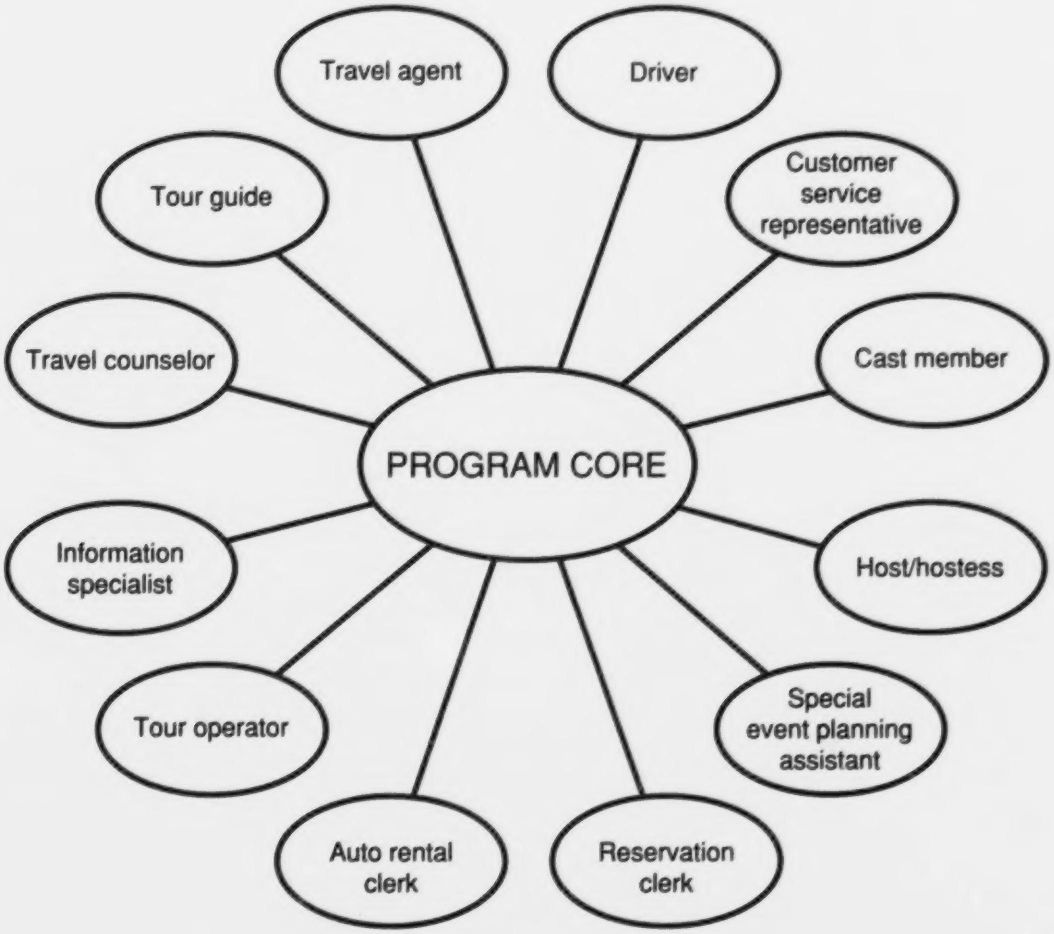
That is the same question as:

What's worth evaluating?

Program: Hospitality and Tourism

Occupational Cluster: Travel/Tourism

Course: Tourism Specialist



PROGRAM CORE
Travel agent
Driver
Tour guide
Customer service representative
Travel counselor
Cast member
Information specialist
Host/hostess
Tour operator
Special event planning assistant
Auto rental clerk
Reservation clerk

Aligning Curriculum

Information Sheet

1. **Terms and definitions**

   a. **Competency** — A learned behavior which can be repeated to a predetermined standard

   b. **Competency list** — List of related tasks with a corresponding rating scale

   c. **Condition** — Describes situation under which task will be performed

   d. **Criterion-referenced evaluation** — Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

   e. **Curriculum alignment** — Agreement among the intended outcomes, instruction, and evaluation

   f. **Duty** — A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

   g. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

   h. **Learner outcome** — Expectation of student performance upon completion of instruction

   i. **Occupational/Program analysis** — Determining duties and tasks performed in an occupation or program

   j. **Performance objective** — A statement of what the student must do in observable and measurable terms

   k. **Standard** — Criteria which specifies exactly what constitutes successful completion of a prescribed performance

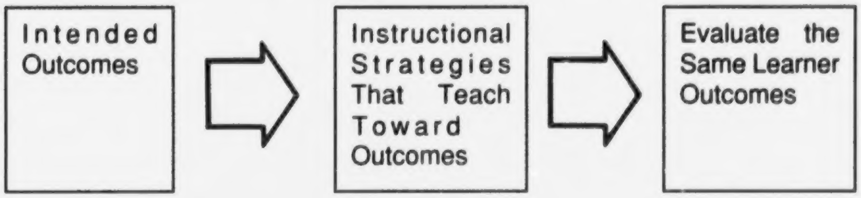
   l. **Task** — A unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

   m. **Task list** — List of related duties and tasks

   n. **Technical committee** — A group of subject matter experts from business/industry/labor and education who identify, then verify, content of materials produced during the development process

Information Sheet

2. Steps in the curriculum alignment concept


Intended Outcomes
Instructional Strategies That Teach Toward Outcomes
Evaluate the Same Learner Outcomes

a. Determine intended outcomes.

Examples: Duties, tasks, competencies

Note: Clearly defined performance objectives are stated at the beginning of instruction.

b. Develop instructional strategies that teach toward outcomes.

Examples: Select instructional materials that support intended outcomes, determine teaching methods

c. Evaluate the same learner outcomes.

Examples: Criterion-referenced evaluation, performance evaluation

Note: Test items should measure the stated performance objectives.

3. Advantages of curriculum alignment

Note: Curriculum alignment is an ongoing process that becomes more effective and efficient as teachers and administrators become more skilled at alignment.

a. Clarifies the objectives of the program

b. Establishes the top priorities of the program

c. Provides information for planning instruction for each program and for meeting school and district objectives

d. Provides for sequential learning

e. Promotes the more effective use of instructional materials

f. Promotes consistent instruction for all students

g. Provides a system of accountability at all levels

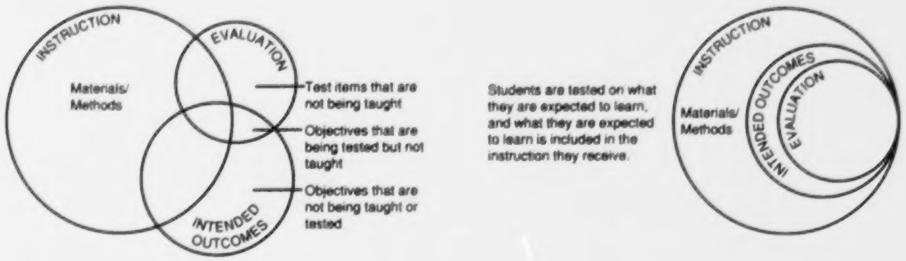
Information Sheet

h. Ensures that students are evaluated on what they are expected to learn, and what they are expected to learn is included in the instruction they receive

Figure 2

To Attain Reliable Instructional Accomplishments . . .

We move from this situation . . . to this . . .


INSTRUCTION
Materials/ Methods
EVALUATION
INTENDED OUTCOMES
Test items that are not being taught
Objectives that are being tested but not taught
Objectives that are not being taught or tested
Students are tested on what they are expected to learn, and what they are expected to learn is included in the instruction they receive.
INSTRUCTION
Materials/ Methods
INTENDED OUTCOMES
EVALUATION

4. Problems to overcome in curriculum alignment

a. Various types of instructional materials do not coordinate with each other.

b. Textbooks often do not match identified competencies.

c. Standardized tests do not consistently measure predetermined competencies.

d. Teachers become frustrated when objectives, instruction, and evaluation cannot be aligned.

5. Steps for curriculum alignment

a. Determine program or course description.

b. Identify sources of task lists.

c. Develop, adopt, or adapt a valid task list.

Note: Verify task list to fit local situation.

d. Identify sources of instructional materials.

e. Complete an instructional analysis.

Example: Evaluate existing instructional materials, and select instructional materials based on verified task list.

Information Sheet

f. Identify sources of criterion-referenced test items.

g. Develop, adopt, or adapt criterion-referenced test items that align with verified task list.

h. Implement into instructional process.

i. Review evaluation data and revise where necessary.

6. Characteristics of a program description

Note: Contact a supervisor or administrator to determine if a program or course description exists.

a. Should be one to two paragraphs in length for each major area or job title

b. Should define the entire scope of the program or course

c. Should include the various duties involved

d. Should list any special or unusual conditions under which duties will be carried out

e. Should identify the tools and equipment needed

f. Should identify the instruction needed

g. Should state any limitations or constraints

Examples: All students must complete the program within one year.
All students must pass an exit exam for completion.

h. Should include whether a license or certification is needed

Information Sheet

7. **Sources of curriculum materials**

    a. Commercial sources

    Examples: Textbook publishers and software developers

    b. National sources

    Note: Many sources now have electronic search capabilities. On-line searches probe large data bases for source information. There is usually a fee charged for on-line searches. Many universities and large-city libraries now provide CD/ROM searches. They purchase data bases on computer disk and provide access, usually free of charge.

    Examples: MAVCC, VTECS, AIT, CORD, NCRVE, NNCCVTE, ERIC, AAVIM

    c. Professional associations

    Note: They usually serve teachers or workers in various areas in support of development of CBE or CBE-related materials.

    d. University resources

    Examples: Materials being developed either through university special projects or curriculum labs such as IML, EDTC, or CETE

    e. State resources

    Note: Many state departments of education and state curriculum labs have developed CBE instructional materials.

    f. Locally produced resources

    Note: These are CBE materials which have been developed by secondary and postsecondary schools.

    g. Materials from businesses, government agencies, and community entities

    h. Persons with expertise in a particular area

    i. Professional publications, theses, and dissertations

    j. Magazines, newspapers, and periodicals

Information Sheet

8. Procedures for completing a task analysis for a program or course

a. Obtain a validated task list.

Example: Occupation: Machinist
Duty: Performing supervisory functions
Tasks: Coordinate workers with work to be done, determine availability of supplies and materials, maintain files, and order and receive stock

b. Verify task list at local level.

Example: Organize an advisory committee of incumbent workers and/or content specialists employed in the program or course you are analyzing. The first meeting would be to confirm the task list and to make modifications that are applicable to local needs. Follow-up meetings would validate these changes.

c. Determine standards for each task.

Examples: Identify standards used in business and industry.
Identify level of acceptance for performance needed.

d. Determine conditions under which tasks should be performed.

e. Identify knowledge(s) and attitude(s) student must obtain to successfully complete task.

Note: First, identify what the student should be able to do (task) when he/she completes the program or course. Second, identify what the student needs to know and feel to successfully complete the task.

f. Sequence tasks.

Example: Simple to complex

g. Submit validated task list to administration for approval.

h. Verify task list in a timely manner.

Note: It is recommended that task lists be verified at least once each year to keep the program or course abreast of current changes and technology.

Information Sheet

9. **Reasons for verifying a task list**

   Note: As credible as another source's task list may be, there are benefits to educators, as well a to business, industry, and labor representatives of the community in verifying a task list. The verification process results in the addition, deletion, and refinement of tasks that truly reflect employers' needs in the identified placement area.

   a. Identifies tasks affected by local codes and regulations

   b. Notes unique procedures used by local firms

   c. Results in greater confidence in the task list

   d. Identifies "missed" tasks and clarifies meanings

   e. Increases public relations benefits by including more people in the analysis

10. **Benefits of involving business, industry, and labor in curriculum development**

   a. Assures validity of task list to be used in development process

   b. Provides greater accountability

   c. Provides opportunities for technical assistance through the use of information, references, illustrations, and/or equipment

   d. Results in an improved educational program

   Examples: Better qualified job applicants are available for hire, greater productivity in school and on-the-job, less on-the-job training

11. **Techniques to verify or validate task lists**

   a. **Structured Group Interview (SGI)** — Group meeting involving incumbent workers or content specialists employed in the job for which the tasks are being verified

   Note: A facilitator, trained specifically for the SGI technique, leads this verification committee through a process to identify and verify tasks. Developing a Curriculum (DACUM) is a form of structured group interview.

   b. **Program Advisory Committee (PAC)** — Group that meets for the purpose of reviewing the task list to verify or validate tasks that could be added, deleted, or modified

Information Sheet

c. **Worker survey** — A developed questionnaire is mailed to a representative sample of incumbent workers employed in the identified occupation or content area

Note: The purpose of the survey is to obtain opinions as to the importance of each task. Compilation of data results in a validated task list.

d. **Worker interview** — The tasks performed in a given occupation or content area are determined by following, observing, and interviewing a sample of workers on the job

12. **Way to sequence tasks**

a. State the basic tasks first before the more complex tasks.

Example: State the cognitive (know) tasks before teaching the psychomotor (do) tasks; state the knowledge and comprehension level cognitive tasks before the application level

b. Sequence the tasks in the order you want the students to learn them.

c. Group related tasks so they can be learned in a fixed order.

Example: Same order as on the job

13. **Steps in conducting an instructional analysis**

a. Analyze each task to determine information needed.

Example: What must the student be able to do?

b. Determine cognitive content needed for each task.

Note: Cognitive learning includes instruction about the skill processes and deals with theory of operation, relationship of different processes or parts, terminology, safety hazards.

Example: What must the student know to complete the task?

c. Determine related technical content from other disciplines needed to perform task.

Note: The following questions help determine technical content—What math principles are needed? Which science principles are applied? Which aspects of communication—reading, writing, speaking, listening—are necessary?

Information Sheet

d. Identify elements from the affective domain such as work habits, attitudes, safety judgements, and personal relationships needed for each task performance.

   Example: What attitudes must the student have to successfully complete the task?

e. Identify tools, equipment, and work aides listed in conditions that are necessary to perform task.

f. Write related topics beside each task.

   Example:

Task	Related Topics
Make appointments	Principles of scheduling Assessing and screening patients Setting priorities

g. Use accurate instructional information to ensure the best possible instructional planning.

14. Reasons to adapt or revise instructional materials

a. Modify the content to match the tasks and/or performance objectives.

b. Involve students as active participants in their own learning processes.

c. Capitalize on the diversities and complexities existing in any given classroom.

d. Make teaching more effective for a teacher and more efficient for a learner.

e. Apply to different learning levels.

f. Involve the kind of mental operations that lead to a clearer interpretation and understanding.

g. Meet description of target population.

   Note: This includes ability level, learning style, interests, goals, and emotional needs.

h. Utilize current information.

i. Supplement textbook.

j. Eliminate biases found in resources.

k. Accommodate variables that have impact on the instructional process.

   Examples: Facilities, equipment, time, class size

Information Sheet

15. Ways to adapt instructional materials

a. Select segments of materials from various sources to reinforce the learning of the objective.

Example: To address the objective "Given the length and width of a house floor plan, the student will compute the number of square feet of the house with 100% accuracy" the teacher may select a chapter in a book on house floor plan dimensions, design an activity sheet on computing different measurements, use a video tape for demonstrating the process, pamphlets from a construction firm emphasizing the suggested importance of accurate measuring and mathematical computation, team work exercises from a suggested activity sheet for practicing, measuring, and computing, and an assessment form from a student workbook.

b. Use only parts of materials that are appropriate to instruction

Examples: How parts might be used:

- Personalize style that teacher desires for the classroom
- Tailor to individual student needs and interests
- Reinforce objective

c. Select a variety of materials to reinforce the objective.

Example: **Printed matter** — Relies mainly on reading

Magazines	Pamphlets
Newspapers	Workbooks

Audio/Visual — Requires some types of equipment; may involve both seeing and listening

Posters	Graphics
Microcomputer	Transparencies

Manipulative aides — Requires physical handling

Puzzles	Games
Experiments	Brainteasers

Information Sheet

d. Modify text to accommodate students' abilities.

Examples: How to simplify text:

- Identify and explain key terms.
- Convert a paragraph that explains a series of procedures into a numbered list.
- Eliminate pronouns and replace them with nouns.
- Take out unnecessary detail.

Examples: How to challenge:

- Restructure content to incorporate concepts, thinking skills, cognitive processes.
- Eliminate repetitious components.

16. Suggestions for aligning performance and written evaluations

Note: The foundation of competency-based education is criterion-referenced evaluation. Criterion-referenced evaluation is the procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective. This type of evaluation ensures that students accomplish a performance objective at a given level of acceptability.

a. Performance evaluation

Note: A performance evaluation measures whether the student can actually perform a task at a specified level of acceptability. It must be observable and measurable.

- Evaluation should assess the task as it is stated.

- The behavior called for in the performance objective should be the same as required for the performance evaluation.

- If a process is to be evaluated, criteria or standards must be included that assess how the student performs the task.

  Note: A student should be observed performing the task, at least during key steps.

- If a product is to be evaluated, product-related criteria or standards must be included.

- If both process and product are important, include items to evaluate both.

Information Sheet

b. Written evaluation

Note: A written evaluation is used to measure a student's mastery of knowledge-related tasks and to evaluate mastery of complex or critical concepts underlying skill-related tasks.

- Test items should be written to match the level as stated in the performance objective.

  Note: Recall test items should require the student to "recall" from memory the correct answer to the test item. Recognition test items should require the student to "recognize" the correct answer from a list of alternatives.

- Test items should measure the student's mastery of the key concepts or facts covered in the scope of the task itself.

- Each test item should stand alone.

Aligning Curriculum

Student Supplement 1—Aligning Instructional Materials

Course Description

Respiratory Therapy Technician

Program Area: Health Occupations Course Length: 1575 Clock Hours - 14 Months CIP Code: 17.0819

This course prepares students for employment in health care facilities where they will administer respiratory care procedures under the supervision of a physician.

The needed knowledge and skills are acquired through classroom instruction, laboratory experience, and clinical applications. Included are the areas of anatomy and physiology of respiration, fundamentals of respiratory care, use of equipment, microbiology, drugs, chest diseases, basic and advanced clinical procedures.

A high school diploma or equivalent is required to enter this competency-based course.

The program is accredited by the American Medical Association.

The graduates of this program are eligible to take the national entry-level certification examination and become licensed to practice in the state of Louisiana.

Unit Competencies and Student Objectives

Unit I: Introduction to Health Care

Competency:

1. Identify the role of the health care provider in establishing a safe and supportive environment for the patient.

Objectives:

a. Identify school and department policies.
b. Demonstrate effective study habits.
c. Define health as related to world health, personal health, and factors influencing health.
d. Identify the purposes and funding sources of health care facilities.
e. Identify the organizational structure of the health care facility.
f. Identify the responsibilities of the health care worker.
g. Identify standards of ethical and legal responsibilities used in professional conduct in health care facilities.
h. Explain the relationship of microorganisms to disease.
i. Perform handwashing procedures to prevent the spread of microorganisms.
j. Use principles of good body mechanics and alignment in positioning patients and performing health care duties.
k. Operate the hospital bed safely.
l. Measure and record vital signs and report abnormalities.
m. Identify the importance of maintaining body fluid balance.
n. Describe the general rules of charting procedures.
o. Explain the importance of appropriate preoperative and postoperative care.
p. Perform appropriate isolation procedures for all types of isolation.
q. Identify fire safety procedures related to school and hospital facilities.
r. Perform cardiopulmonary resuscitation (CPR) procedures for adult, child, and infant.

Student Supplement 1

2. Relate fundamental mathematics, English, and science skills to health care.

Objectives:

a. Solve problems using addition, subtraction, multiplication, and division of fractions.
b. Solve problems using addition, subtraction, multiplication, and division of decimal numbers.
c. Solve problems using addition, subtraction, multiplication, and division of percentages.
d. Solve problems using addition, subtraction, multiplication, and division of ratios and proportions.
e. Solve conversion problems involving fractions, decimals, percentages, ratios, and proportions.
f. Identify apothecary, metric, and household measurement equivalents.
g. Solve medication dosage problems using apothecary, metric, and household systems and basic mathematical skills.
h. Write grammatically correct sentences and paragraphs.
i. Recognize the meanings of commonly used medical terminology in health care.
j. Describe fundamental laws of chemistry and gas physics related to respiratory care.

Instructional Analysis

Unit 1: Introduction to Health Care

Course: Respiratory Therapy Technician

Competency: 1. Identify the role of the health care provider in establishing a safe and supportive environment for the patient.

Student Objectives	Subject Matter Content	Suggested Instructional Activities	Suggested Instructional Resources
//	//	//	
5. Identify the organizational structure of the health care facility.	5. Organizational Structure A. Administrators B. Department heads C. Physicians D. Health care worker	5. Discuss handout Show organizational chart and explain lines of communication and chain of supervision.	Textbook: 6. Eubanks, *Comprehensive Respiratory Care*, Module 2 Handout: Pamphlet: "Your Hospital Stay Under Medicare's Prospective Payment Plan" by U.S. Dept. of Health and Human Services. Pub. No. HCFA 02163 ICN 488334, 1987. Organizational chart
6. Identify the responsibilities of the health care worker.	6. Responsibilities of the Health Care Worker A. Understanding yourself B. Good mental health C. Communication skills D. Professional appearance E. Good personal health	6. Conduct class discussion on the responsibilities of health care workers. As a class, compile a personal appearance checklist. Have students use checklist for self-evaluation. Have students demonstrate communications skills by role playing.	Textbook: 11. Rambo, *Nursing Skills for Clinical Practice*, Unit III

Student Supplement 1

Student Objectives	Subject Matter Content	Suggested Instructional Activities	Suggested Instructional Resources
7. Identify standards of ethical and legal responsibilities used in professional conduct in health care facilities.	7. Ethical and Legal Responsibilities A. Ethical behavior B. Legal issues 1. Terms 2. Standards of care C. Professional conduct	7. Discuss the "Code of Ethics" handout. Have students define legal and ethical terms. Using hypothetical legal and ethical situations, have students as a class, apply "Code of Ethics" principles to decide issues.	Textbook: 11. Rambo, *Nursing Skills for Clinical Practice*, Unit II Handout: "Code of Ethics," American Association of Respiratory Care, 1920 Regal Row, Dallas, TX 75235, Phone (214) 630-3540
8. Explain the relationship of microorganisms to disease.	8. Introduction to Microbiology A. Microorganisms 1. Pathogenic 2. Non-pathogenic B. Conditions affecting the growth of microorganisms 1. Food 2. Moisture 3. Temperature 4. Oxygen 5. Light C. Chain of infection 1. Causative organism 2. Reservoir 3. Portal of exit 4. Mode of transmission 5. Portal of entry 6. Susceptible host	8. Present information on microorganisms and growth conditions using lecture/transparencies/chalkboard format. Draw on chalkboard the chain of infection cycle, citing specific examples.	Textbooks: 6. Eubanks, *Comprehensive Respiratory Care* 13. Kacmarek, *The Essentials of Respiratory Therapy* 15. Wistreich, *Microbiology and Human Disease* 16. Delaat, *Microbiology for the Allied Health Professions* Videos: "Aids: What You Need to Know" by Future Vision "Aids: Medical Education for the Community" by Med-Ed Productions Available on loan from the Curriculum Center, P.O. Box 1159, Natchitoches, LA 71457

Student Supplement 1

INSTRUCTIONAL RESOURCE LIST **COURSE:** Respiratory Therapy Technician

BOOK NUMBER	TITLE	AUTHOR	PUBLISHER	ADDRESS	COPYRIGHT DATE
1.	*English the Easy Way*, 5th Ed. ISBN: 0-538-05880-3	Schachter, Norman Clark, Alfred	South-Western Publishing Co.	5101 Madison Road Cincinnati, OH 45227 Phone: 800-543-8444 or 513-527-6950	1985
2.	*Dean Vaught 350: Learning System Medical Terminology*		Damon Instructional Learning Systems Division	80 Wilson Way Westwood, MA 02090 Phone: 617-329-4300 or 1-800-348-0025 (John Primrose, Sales Rep. 504-488-1575)	1983
3.	*Essentials of Human Anatomy and Physiology* ISBN: 0-201-15882-5 and Workbook ISBN: 0-203-6731-4	Marieb, Elaine	Addison-Wesley Publishing Co. Nursing Division	2725 San Hill Road Menlo Park, CA 94025	1984
4.	*Respiratory Therapy Equipment* ISBN: 0-8016-3312-5	McPherson, Steven Spearman, Charles	C. V. Mosby Co.	11830 Westline Industrial Dr. St. Louis, MO 63146 Phone: 312-726-9733 or 800-621-9262	1985
5.	*Respiratory Therapy Pharmacology*, 3rd Ed. ISBN: 0-8151-7076-9	Rau, Joseph	Year Book Medical Publishers, Inc.	200 North LaSalle St. Chicago, IL 60601 Phone: 312-726-9733 or 800-621-9262	1988

Source: *Respiratory Therapy Technician*, Instructor's Guide, Louisiana Technical Resource Center

Aligning Curriculum

Student Supplement 2—Sources of Curriculum Materials

Note: This is not an all-inclusive list of sources but is a representation of resources available to vocational and technical educators.

a. National Network for Curriculum Coordination in Vocational and Technical Education (NNCCVTE) is a federally-sponsored network of all states and trust territories devoted to improving vocational and technical education. Sic regional centers and state representatives in each state and trust territory can access the Network's Curriculum Clearinghouse for task lists, instructional materials, and test item banks being developed in the public sector of vocational and technical education.

NNCCVTE Project Officer:
Bernice Anderson
U.S. Department of Education
Room 4512, Switzer Building
Washington, D.C. 20202-7242
(202) 732-2372 FAX (202) 732-3897 AVO0051

Regional Curriculum Coordination Centers (CCC)

East Central CCC
Rebecca Douglass
IVCC/ECN, F-2
Sangamon State University
Springfield, IL 62794-9243
(217) 786-6375
FAX (217) 786-6036
AVO1727

Midwest CCC
Richard Makin
Oklahoma Department of Vocational and Technical Education
1500 West Seventh Avenue
Stillwater, OK 74074-4364
(405) 743-5192
FAX (405) 377-5142
AVO4602

Northwest CCC
Bill Daniels
Old Main—Room 478
Saint Martin's College
Lacey, WA 98503
(206) 438-4456
FAX (206) 459-4124
AVO5976

Northeast CCC
Martha Pocsi
Division of Vocational Education
New Jersey State Department of Education
Crest Way
Aberdeen, NJ 07747
(908) 290-1900
FAX (908) 290-9678
AVO3854

Southeast CCC
Rebecca Love-Wilkes
Mississippi State University
Research and Curriculum
P.O. Drawer DX
Mississippi State, MS 39762
(601) 325-2510
FAX (601) 325-3296
AVO3101

Western CCC
Lawrence F. H. Zane
University of Hawaii
Wist Hall 216
1776 University Avenue
Honolulu, HI 96844-0001
(808) 956-7834
FAX (808) 956-3374
AVO1476

Student Supplement 2

b. State Curriculum Centers, approximately 35 states have state curriculum centers which give, sell, or loan curriculum materials developed by their state and others. All state vocational curriculum centers participate in NNCCVTE.

Examples: Curriculum and Instructional Materials Center (CIMC)
Oklahoma Department of Vocational and Technical Education
1500 West Seventh Avenue
Stillwater, OK 74074-4364
(405) 377-2000 (800) 654-4502 FAX (405) 743-5154

Arkansas Vocational Curriculum Development Center (AVCDC)
115 Graduate Education Building
University of Arkansas
Fayetteville, AR 72701
(501) 575-6606 (800) 632-8754 FAX (501) 575-4681

Kansas Competency-Based Curriculum Center
Washburn University, SACE
Topeka, KS 66621
(913) 231-1010, Ext. 1534 FAX (913) 231-1089

Louisiana Technical Resource Center
P.O. Box 1159
Natchitoches, LA 71458-1159
(318) 357-3155

Instructional Materials Laboratory (IML)
London Hall
University of Missouri-Columbia
Columbia, MO 65211
(314) 882-2883

Education Development and Training Center (EDTC)
East Texas State University
Commerce, TX 75428
(214) 886-5624 (800) 356-3382

Student Supplement 2

c. Multi-State Curriculum Development Consortia. Several consortia exist which develop task lists, instructional materials, and test items as part of their curriculum development process. Major consortia for vocational curriculum materials are:

American Association for Vocational Instructional Materials	(AAVIM)
Applied Biology/Chemistry	(ABC)
Applied Communication	(AC)
Applied Mathematics	(AM)
Applied Mathematics II	(AM II)
Basic Skills Consortium	
Consortium for the Development of Professional Materials for Vocational Education	(CDPMVE)
Electric Utility Instructor Training Consortium	(EUITC)
Exploring Technology Education	(ETE)
Marketing Education Resource Center	(MarkED)
Mid-America Vocational Curriculum Consortium	(MAVCC)
National Alliance of Community & Technical Colleges	(NACTC)
National Alliance of Partnerships in Equity	(NAPE)
National Association of State Directors of Vocational Technical Education Consortium	(NASDVTE)
National Consortium of State Career Guidance Supervisors	(NCSCGS)
National Entrepreneurship Education Consortium	(NEEC)
National Leadership Academy for Local Administrators	(NLALA)
National Network for Curriculum Coordination in Vocational and Technical Education	(NNCCVTE)
National Occupational Competency Testing Institute, Inc.	(NOCTI)
Principles of Technology	(PT)

Student Supplement 2

SREB-State Vocational Education Consortium	(SREB-SVEC)
Tech Prep Consortium	
Vocational-Technical Education Consortium of States	(V-TECS)
Workplace Readiness	(WR)

List of Consortia

AAVIM
745 Gaines Schools Road
Athens, GA 30605
(800) 228-4689 or
(404) 543-7557

ABC
CORD, Suite C
601 Lake Air Drive
Waco, TX 76710
(800) 772-8756 or
(817) 231-3015

AC
AIT
1111 West 17th St., Box A
Bloomington, IN 47402
(800) 457-4509 or
(812) 339-2203

AM
CORD, Suite C
601 Lake Air Drive
Waco, TX 76710
(800) 772-8756 or
(817) 231-3015

AM II
CORD, Suite C
601 Lake Air Drive
Waco, TX 76710
(800) 772-8756 or
(817) 231-3015

CDPMVE
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

EUITC
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

ETE
AIT
1111 West 17th St., Box A
Bloomington, IN 47402
(800) 457-4509 or
(812) 339-2203

MarkEd
1375 King Avenue
Columbus, OH 43212
(614) 486-6708

MAVCC
1500 West Seventh Avenue
Stillwater, OK 74074-4364
(800) 654-3988 or
(405) 377-2000

NACTC
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

NAPE
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

NASDVTEC
1420 16th Street, NW
Washington, DC 30036
(202) 328-0216

NBSC*
CALS, Room N-6511
U.S. Department of Labor
200 Constitution Ave., NW
Washington, DC 20210
(202) 523-5600

NCATC
CORD, Suite C
601 Lake Air Drive
Waco, TX 76710
(800) 772-8756 or
(817) 231-3015

* Proposed Consortium

Student Supplement 2

NCSCGS
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

NEEC
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

NLALA
CETE
1900 Kenny Road
Columbus, OH 43210
(800) 848-4815 or
(614) 292-4353

NNCCVTE
U.S. Dept. of Education
Room 4512, Switzer Building
Washington, DC 20202-7242
(202) 732-2372

NOCTI
Ferris State University
409 Bishop Hall
Big Rapids, MI 49307
(800) 334-6283 or
(616) 796-4695

PT
AIT
1111 West 17th St., Box A
Bloomington, IN 47402
(800) 457-4509 or
(812) 339-2203 and
CORD, Suite C
601 Lake Air Drive
Waco, TX 76710
(800) 772-8756 or
(817) 231-3015

SREB-SVEC
Southern Reg. Educ. Board
592 10th Street, NW
Atlanta, GA 30318-5790
(404) 875-9211

TP
Suite 815
William C. Norris Institute
245 East 6th Street
St. Paul, MN 55101
(612) 297-6300

V-TECS
1866 Southern Lane
Decatur, GA 30033-4097
(800) 248-7701 or
(404) 329-6543

WR
AIT
1111 West 17th St., Box A
Bloomington, IN 47402
(800) 457-4509 or
(812) 339-2203

*Excerpted from 1990 Consortia Directory produced by the NNCCVTE, East Central Region

Student Supplement 2

d. Professional associations, companies, and union apprenticeship programs. Many occupational areas have professional associations or unions which produce curriculum materials.

Examples: Associated General Contractors of America (AGC)
1957 E Street, NW
Washington, DC 20006
(202) 393-2040

Associated Builders and Contractors Association (ABC)
729 15th Street, NW
Washington, DC 20006
(202) 637-8800

National Training Fund for Sheet Metal and Air Conditioning Industry
601 North Fairfax Street
Alexandria, VA 22314
(703) 739-7200

National Association of Women In Construction (NAWIC)
327 South Adams Street
Fort Worth, TX 76104
(800) 552-3506

Note: The *Encyclopedia of Associations* published by Gale Research, Inc., Detroit, MI, annually provides a list of major associations by subject area. This publication is available at most libraries and resource centers.

Aligning Curriculum

Student Supplement 3—Questions to Ask at a Task Analysis Meeting

To identify task statements:

1. What does the person do in performing the job, i.e., what are the common tasks or activities a person must be able to do?
2. What must a person know to be successful on the job?
3. What background information (knowledge) is most important for the employee to know?
4. What are the day-to-day activities performed by the employee?
5. What are the day-to-day problems encountered by the employee?
6. Must the employee solve problems in performing the job? If yes, what type of problems must be solved?
7. What are the entrance requirements for obtaining a job with your company?
    - Are special tests given? If yes, what are they?
    - Is a certain level of schooling required?
8. Are there handbooks or lists of rules which an employee must follow in this organization?
9. What kinds of things should the students be able to do at the end of the course or program that will facilitate their becoming a skilled technician in the least amount of time?

To identify frequency of performance:

1. How often is the task performed?
2. Is the task used every day? Every week? Every month? Every year?
3. On the average, is the task needed five, ten, twenty-five times per day? Per week? Per month?

Student Supplement 3

To identify importance of the task:

1. Is the task essential for job entry?
2. Is the task desirable for job entry?
3. Is the task unnecessary for job entry?
4. What if the task cannot be developed in the educational program?
5. How many of your entering employees now perform this task?
6. How many of those who advance in your organization are able to perform this task?

To identify conditions under which task will be performed:

1. Under what conditions is the task to be used or to be performed?
    - Where are the tasks performed?
    - When are the tasks performed?
    - How are the tasks performed?
    - With whom are the tasks performed?
    - Are there time limits within which the job or tasks must be performed?
2. What tools or major equipment must the employee be able to operate?
3. Does the employee work mainly with equipment or is there some contact with the customer?
4. Does the employee need any special skills in performing the tasks.
5. What circumstances must exist for the task to be successfully applied?
6. Are there any special requirements?
    - Certification
    - Registry
    - Union requirements
    - Age restrictions
    - Physical requirements

Student Supplement 3

7. Are there special tools or equipment the employee must use?
    - What is the employee supposed to do with the special tools, forms, etc.?
    - What is the employee not supposed to do with the special tools?
8. Are there forms which must be filled out by the employee?
    - What are the forms?
    - When are they filled out?
9. What attitudinal characteristics are essential, if any, in performing the tasks?
10. Is the employee expected to diagnose a problem and make a decision as to what must be done to correct the problem? If yes, how do you train the employee to diagnose problems?
11. Is there a correct sequence which must be followed in the performance of the task?
12. Must the employee be able to recognize dangers when performing a task?
13. Does the employee deal with the public while on the job?
14. Are any special or personal attributes required for job success?
15. Are special manipulative skills required? If yes, what are they? What must the employee be able to manipulate?
16. Must the employee be able to recall certain facts, sounds, conditions, reasons, knowledge, etc.? If yes, what are they?
17. Must the employee be able to give or to receive clear and concise verbal orders or directions? If yes, what types or forms of speech must be used?

To identify criteria that exhibit satisfactory performance of a task:

1. What criteria can be used to evaluated acceptable employee performance of the task?
    - What quality?
    - How fast? (Time or quantity)
2. How well should the task be achieved?
3. What criteria can be used to evaluate unacceptable task performance?

Student Supplement 3

4. Must the employee be able to discriminate between items or things for a quality judgment? If yes, what are these items?

5. What are the most common mistakes made by employees in performing the task?

   - Beginning employees?

   - Skilled employees?

6. Upon what basis do you evaluate your employees for promotion?

7. What factors are used in evaluation?

8. Why do people get fired from this job?

9. Why do people get promoted?

10. Describe your best employees.

11. Describe your poorest employees.

Aligning Curriculum

Student Supplement 4—Hints for Developing Duty and Task Statements

The following hints should be helpful to you when writing duty and task statements.

Duties

1. Duties are distinct, major activities involved in performing a job, and consist of a collection of related tasks.

2. Characteristics of duties include:

   - One of the worker's principal responsibilities

   - Occupies a reasonable portion of the worker's time

   - Occurs regularly in the worker's work cycle

   - Describes tasks which involve closely related knowledges and skills

   Example: Occupation — LPN
   Duties — Performing supervised management functions
   — Providing personal patient care and assistance
   — Performing comfort and safety functions
   — Performing aseptic techniques
   — Administering treatments

Tasks

1. Tasks are complete and distinct units of work performed by an individual on the job.

2. Characteristics of tasks include:

   - Each task has a definite beginning and ending within a limited period of work time.

Student Supplement 4

- Performance of a task usually results in a product or some observable change in the student or work environment.

Example: Occupation — LPN
Duty — Providing patient care and assistance
Tasks — Adjust beds
— Assist patient to ambulate
— Give backrub
— Turn patient in bed
— Apply restraints
— Dress burns
— Wash hands
— Administer tepid baths
— Administer oxygen
— Apply binders
— Irrigate throat

Task Statements

1. Task statements consist of three components:

    - Action verb—Indicates what a person does on the job

    - Object—Is the element acted upon

    - Qualifier—Used to make a task statement more specific or to distinguish it from similar tasks such as "apply icing by hand" or "apply icing by machine." Qualifiers may limit the task actions to a specific procedure or process, or may identify a specific area of an object.

2. Characteristics of task statements

    - Each should be a complete statement that begins with a present tense action verb which describes a performance which will be done by the student for mastery.

    Examples: **Adjust** transcriber controls
    Replace brake shoes
    Calculate your net salary

    - The performance which the task describes must be readily observable and measurable.

    Examples: Adjust **transcriber controls**
    Replace **brake shoes**
    Calculate your **net salary**

Student Supplement 4

- Each is designed to communicate to the student, teacher, administrators, parents, advisory committee members, and employers what must be done to master the tasks.
- Words like correctly, safely, according to industry standards, or to teacher's satisfaction should not be included in a task statement.
- Each task statement should be short and concise.
- Each task should be typical of an assignment given to a worker in the occupation.
- Each task should be an entry level activity of the occupation for training is being provided.
- Prerequisite tasks should appear first when sequencing tasks within a duty.
- Each task statement must be capable of standing alone and be completely understood.
- Two or more tasks must appear under each duty.

Aligning Curriculum

Student Supplement 5—Hints for Evaluating Existing Materials

As you are no doubt aware, instructional materials, whether produced by commercial publishers or educational agencies, can vary greatly in quality. They cannot be taken at face value. Not all materials that claim to be competency-based really are. And not all competency-based materials are of good quality.

Any material you consider using should first be evaluated using the criteria against which you would measure any instructional material, competency-based or otherwise. Consider the following criteria when evaluating existing materials.

1. Is the content on target?
2. Does it deal specifically with the skills my student needs to achieve?
3. Is the content concise, including only key content and not extraneous material that will only confuse students?
4. Is the content accurate and up-to-date? Totally? In part?
5. Is the material appropriate for my students? (Age, reading ability, occupational development)
6. Can my students understand the vocabulary used?
7. Will this material motivate my students?
8. Is this material geared to the abilities, needs, and interests of my students? All my students? Some of my students?
9. Do I have access to the equipment necessary to use this material?
10. Do I have the facilities necessary to use this material effectively?
11. Do I have access to the funds necessary to purchase this material?
12. Is the material well produced technically?

    Example: Is the print in the text easy to read? Is the film's sound clear and audible?
13. Has the material been tested or validated?
14. Can you use the material "as is"?
15. Can the material be adapted to fit your needs?

It is more than likely that you find some materials that, with some adaption, can be made to fit local needs. At the very least you should be able to locate a variety of excellent materials that can be drawn together into a total, well-organized, competency-based instructional system.

Aligning Curriculum

Assignment Sheet 1—Determine a Program or Course Description

Name ______________________ Overall Rating __________

Evaluation criteria	**Rating**
Contact persons were listed	______
Questions were answered	______
Program description was obtained or written	______
Program description attached to assignment sheet	______
Program description changes are identified	______

It is important to locate or develop a program description in order to identify the parameters of a program. You need to know the job market for graduates, types of jobs for which the graduates are being hired, the limitations or constraints put on the program by the advisory committee, performance standards, unions, or others.

Directions: Determine the description for a program or course by completing the following statements and activities. Write your answers in the space provided.

1. Who should be contacted concerning obtaining a program description?

2. What questions should be asked regarding a program description?

Assignment Sheet 1

3. Depending on the responses to the questions, you may or may not have identified a program description. In order to identify the tasks, you will need to develop a program description. Do you have a program description? Yes No (circle one) If yes, go to step 4. If no, you will need to write a program description before going to step 4. (Attach a copy of program description to this assignment sheet.)

4. What changes or refinements are needed in the program description, before developing the task list?

Aligning Curriculum

Assignment Sheet 2—Locate Sources of Curriculum Materials

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Specific type of information needed was determined	______
Types of curriculum materials needed was determined	______
Possible sources of curriculum materials were identified	______
Possible sources of curriculum materials were contacted	______

It is important to locate sources of curriculum materials. Many hours of valuable time and resources may be saved by locating task lists, instructional materials, and test items developed by other sources.

Directions: Using the information provided in this unit, locate sources of curriculum materials for a program or course by completing the following statements:

1. Determine the type of information needed.

   Note: Be specific as possible. Most searches are done by subject area or specific item. There are hundreds of articles on competency-based education but fewer on aligning instructional materials.

   ____

   ____

   ____

2. Determine the types of curriculum materials needed.

   Examples: Task list, instructional materials, LAPs, test items

   ____

   ____

Assignment Sheet 2

3. Identify and contact possible sources of curriculum materials.

Examples: MAVCC, NNCCVTE

Contacted
Yes No

Name ______________________________ ☐ ☐

Address ______________________________

Phone ______________________________

Name ______________________________ ☐ ☐

Address ______________________________

Phone ______________________________

Name ______________________________ ☐ ☐

Address ______________________________

Phone ______________________________

Name ______________________________ ☐ ☐

Address ______________________________

Phone ______________________________

Aligning Curriculum

Assignment Sheet 3—Verify a Task List

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Verification techniques were stated	______
Occupations or major areas of program were identified	______
Tentative list of duties and tasks were completed	______
Duties and tasks were verified	______

Competency-based education prepares the student to perform at predetermined and stated performance standards. Each task becomes a competency to be achieved and is the foundation upon which a competency-based program is based.

To develop a competency-based program, the tasks with an occupation or content area must be identified to establish the competencies to be learned. Tasks should be identified for each learning domain—psychomotor (do), cognitive (know), and affective (attitude). Next, steps needed to be done to accomplish each task must be specified. Therefore, a task analysis is conducted to determine what tasks are done. From the tasks that are identified through the task analysis, task steps and student performance objectives can be written.

Since the success of a task analysis is affected by the reliability of the information collected, a combination of techniques can be used to obtain information to assure accurate and complete information. Verification of information is easily accomplished since facts omitted while using one method will usually be obtained through the use of a second technique.

Directions: Verify duties and tasks by completing the following steps. Write your answers in the space provided. Additional information may be attached.

Step 1: Determine techniques you will use to verify duties and tasks.

____

____

Assignment Sheet 3

Step 2: Identify occupations or major areas of program.

Program: ____________________

Occupation or major area: ____________________

Spin-off levels: ____________________

____

____

____

Step 3: Develop a tentative list of duties and tasks based on your course or program description.

Note: This list may be secured from other sources or developed from scratch. See Student Supplement 2—Sources of Curriculum Materials.

Duty: ____________________

Tasks: ____________________

____

____

____

____

____

____

____

Step 4: Verify the task list you have developed.

Process answered the following statements:

a. Duties were verified. Yes ______ No ______

b. Task statements identified what the student should be able to "do". Yes ______ No ______

Assignment Sheet 3

c. Task statements identified what the student should "know" to be able to complete the "do" statements. Yes______ No ______

d. Task statements identified appropriate "feelings or attitudes" student should show. Yes ______ No ______

e. Conditions for successful completion of tasks were identified (i.e. tools and equipment, performance steps, etc.). Yes ______ No ______

f. Criteria or standards were verified. Yes ______ No ______

g. Basic skills to be reinforced by the "do" task statements were identified. Yes ______ No ______

Aligning Curriculum

Assignment Sheet 4—Sequence Tasks

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Followed directions	______
Selected a duty area	______
Determined a sequencing pattern	______
Sequenced tasks based on pattern	______

Since the completion of tasks takes place over a period of time, you must consider the sequence in which the student will encounter the tasks. In developing your instructional program, you should place the tasks in the sequence you want the student to learn them. The transition from one task to another should be smooth and meaningful for the student.

Example: The student needs to know how to use the spray gun and prepare a vehicle for painting before attempting to spray paint a vehicle.

Tasks can be divided into two groups.

1. Those related to each other in one or more ways

   It usually is necessary to learn one or more tasks before learning others. Sequencing depends upon the following: Are the tasks basic tasks? Are they tasks that are common to doing many tasks? Are the tasks part of a list necessary to learn before the student can master the more complex tasks?

2. Those which are unrelated to each other

   The order of learning does not make any difference. Sequencing is not a problem. You can sequence any way you want.

Assignment Sheet 4

Directions: Select a duty area you have verified in Assignment Sheet 3. Determine which of the following techniques you will use to sequence the tasks:

- State the basic tasks first before the more complex tasks
- Sequence tasks in the order in which you want the students to learn them
- Group related tasks so they can be learned in a fixed order. Sequence tasks using the technique you have determined.

Aligning Curriculum

Assignment Sheet 5—Evaluate Existing Instructional Materials

Name ________________________________ Overall Rating __________

Evaluation criteria	**Rating**
Followed directions	______
Evaluated instructional materials using criteria	______
Key strengths of the material were identified accurately	______
Key weaknesses of the material were identified accurately	______
Given its quality and content, decision concerning use of the materials was appropriate	______
Proposed modifications to the material would increase its appropriateness or usability	______

There are some additional criteria that need to be considered if the instructional material you are evaluating is a package that you intend to use basically "as is" with students. Although the specific criteria may vary depending on the way you or your institution (or district or state) define the fundamental characteristics of instructional materials, the evaluation checklist should be similar to the one in this assignment sheet.

By taking the time to review the materials already available to you, and by carefully considering each in light of some specific quality criteria, you can save yourself a good deal of unnecessary effort. There may be instructional materials you can use just as they are. Ideally, you could find a set of competency-based instructional materials that fit your students and your competencies precisely, but don't count on it.

Directions: Using existing sources of materials, locate and obtain competency-based instructional materials covering a competency in your area.

Note: If circumstances make it difficult for you to acquire a learning package through outside sources, you may check with your teacher.

Evaluate the instructional materials against the following set of criteria. Then, describe in writing how you would rate the materials by answering the questions following the criteria.

Assignment Sheet 5

Instructional Materials Checklist

Name

Title of Materials

Date

Directions: To evaluate the instructional materials, place an "X" in the No, Partial, or Yes box beside each item to indicate how well the materials meet that criterion. If a criterion is not applicable to the materials in question, place an "X" in the N/A box.

RATING

1. The learning package contains the following basic components:
    a. Clear directions for using the learning package or a self-explanatory format ☐ ☐ ☐ ☐
    b. A rationale or introduction explaining the purpose and importance of the skills being covered ☐ ☐ ☐ ☐
    c. A competency statement and/or performance objective ☐ ☐ ☐ ☐
    d. Clear, complete explanations of the activities to be completed in order to achieve each enabler and final competence ☐ ☐ ☐ ☐
    e. Instruction sheets or reference to other resources references containing the needed information ☐ ☐ ☐ ☐
    f. Devices for immediate feedback ☐ ☐ ☐ ☐
    g. A performance checklist designed to measure actual student performance of the competency ☐ ☐ ☐ ☐
2. The learning package also contains the following components (depending on your criteria for learning package content and format):
    a. A listing of prerequisites ☐ ☐ ☐ ☐
    b. A listing of special terminology, and any resources and materials required ☐ ☐ ☐ ☐
    c. A preassessment device ☐ ☐ ☐ ☐
3. The learning package either includes all necessary materials or clearly specifies what outside materials are needed ☐ ☐ ☐ ☐

Assignment Sheet 5

4. The learning package contains a variety of activities to suit a range of learning abilities and styles . . . . ☐ ☐ ☐ ☐

5. Opportunities for recycling activities are included . . . . ☐ ☐ ☐ ☐

6. The learning package provides opportunities for students to interact with peers, instructor, and others . . . . ☐ ☐ ☐ ☐

7. Supplementary enrichment activities are provided to meet the needs of interested students . . . . ☐ ☐ ☐ ☐

8. Although the learning package could be enhanced by group activities, a student could complete it on an independent basis . . . . ☐ ☐ ☐ ☐

9. The learning package activities are sequenced in a logical order . ☐ ☐ ☐ ☐

10. The reading level, technical level, and interest level are appropriate to the target student group . . . . ☐ ☐ ☐ ☐

11. The learning package is well produced (e.g., good grammar, correct spelling, clear layout, clean copy) . . . . ☐ ☐ ☐ ☐

12. The learning package is attractive . . . . ☐ ☐ ☐ ☐

Questions

How would you rate the instructional materials?

1. Overall rating: ____________________

2. Specific strengths: ____________________

____

____

3. Specific weaknesses: ____________________

____

____

Assignment Sheet 5

4. Would you use the materials? Yes ______ No ______

How? ____

____

____

5. What, if anything, would you do to modify the materials?

____

____

____

____

Aligning Curriculum

Assignment Sheet 6—Select Instructional Materials Based on a Verified or Validated Task List

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Followed directions	______
Course description was stated	______
Validated task list was used	______
Suggested matter content was outlined	______
Suggested instructional activities were stated	______
Suggested instructional resources were identified	______
Resource list was prepared	______

Once a task list has been validated, instructional materials need to be identified which will assist the teacher and student in achieving the tasks. The following is a systematic approach for mastering that task.

1. State the course description.

2. Identify the validated task list to be used.

3. Prepare a spread sheet to include:

    a. Duty or unit objective—States in broad terms the subject matter to be covered

    b. Tasks or specific objectives—States the specific performance to be achieved

    c. Subject matter content—Outlines the body of knowledge, skill, and attitudes that are necessary for students to accomplish the specific objectives

    d. Suggested instructional activities—Provide activities which will best assist students in accomplishing the specific objectives

       Note: Teachers are encouraged to supplement these activities and methods of instruction.

    e. Suggested instructional resources—Suggest instructional materials that may be used to support instruction

Directions: Select instructional materials based on a validated task list. Use a systematic approach similar to the example in this assignment sheet. Student performance will be evaluated according to the criteria listed.

Aligning Curriculum

Assignment Sheet 7—Complete a Checklist for Aligning Test Items

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Followed directions	______
Evaluated test items according to criteria provided in assignment sheet	______

Competency-based education focuses on how each student performs against pre-determined standards. Competency-based standards take into account the mastery of identified skills and knowledge, the student's ability to attain stated performance objectives, and the individual abilities of each student. Evaluation, in the form of criterion-referenced test items that match the stated objectives, serves a two-fold purpose. It documents the mastery of program or course content and is one indicator of the quality of instruction being offered. Criterion-referenced tests provide individual students with an assessment of their competency levels in a given course by identifying strengths and weaknesses.

The purpose of this assignment sheet is to assist you in determining the criteria necessary to align test items with the stated performance objectives.

Directions: Select this unit of instruction or one for your program or course. Evaluate the alignment of test items with the stated performance objectives by using the criteria provided in this assignment sheet.

Criteria for performance evaluation

		Yes	No
1.	Do items measure whether the student can perform a given task?	______	______
2.	Is each item objective and measurable?	______	______
3.	Are items listed in the order they occur?	______	______
4.	Are items written at a high enough level to ensure competence of those passing the evaluation?	______	______
5.	Is the student told exactly what to do?	______	______

Assignment Sheet 7

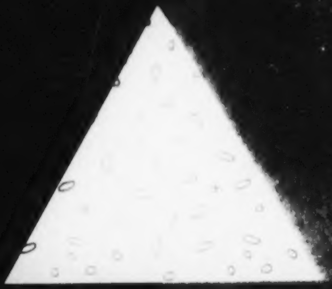
		Yes	No
6.	Are process items included if the process is important for competence?	______	______
7.	Are product-related items included if the quality of a finished product is critical for competence?	______	______
8.	Are criteria for acceptability of product-related items spelled out clearly?	______	______
9.	Do the standards for criterion levels specify the performance, conditions, and criteria necessary to achieve a given objective?	______	______
10.	Have various levels of performance criteria been established for each criterion level?	______	______
11.	Can checklist be rated yes or no?	______	______
12.	Are any special restrictions mentioned?	______	______
13.	If applicable, is any time limit mentioned?	______	______

Criteria for written evaluation

		Yes	No
1.	Do all items relate directly to the "must know" knowledge involved in the performance objective?	______	______
2.	Do the test items test the same performance called for by the performance objectives?	______	______
3.	Do the test items follow the same sequence as the performance objectives?	______	______
4.	Is there a test item for each performance objective?	______	______
5.	Are the test items stated in clear, concise language?	______	______
6.	If the task involves mastery of higher-level concepts, does the test evaluate this?	______	______
7.	Is the acceptable score indicated?	______	______
8.	If applicable, is a time limit mentioned?	______	______
9.	Does the test provide accountability?	______	______

Competency-Based I

Managing Competency



Managing Competency-Based Education is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Managing Competency-Based Education

Objective Sheet

Unit Objective

After completing this unit, the student should be able to develop a system for monitoring individual progress and maintain individual records. The student should demonstrate these competencies by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to managing competency-based education with their correct definitions.
2. State the common aspects of maintaining and managing the physical environment.
3. State factors which affect long-range planning.
4. State reasons for developing and maintaining a filing system.
5. State factors that will determine the filing system to use.
6. State decisions to make in starting and maintaining a filing system.
7. State two reasons for monitoring student progress.
8. Arrange in order steps in developing a system to monitor student progress.
9. State reasons for developing a progress chart.
10. State purposes of competency profiles.
11. Arrange in order the guidelines for using competency profiles.
12. List information to include on a competency profile.
13. Select from a list purposes of grading patterns.
14. State the four characteristics of a good grading pattern.
15. State approaches for assigning grades.

Objective Sheet

16. Complete statements concerning goals of a learning contract.
17. Arrange in order steps in the development of a learning contract.
18. State the items in a learning contract.
19. Develop a plan to implement competency-based instructional materials into an existing program. (Assignment Sheet 1)
20. Develop a plan for an appropriate filing system. (Assignment Sheet 2)
21. Develop a progress chart. (Assignment Sheet 3)
22. Write a plan for using a competency profile in a program. (Assignment Sheet 4)
23. Apply techniques in establishing a grading pattern. (Assignment Sheet 5)
24. Develop a grading pattern. (Assignment Sheet 6)
25. Complete a student performance contract. (Assignment Sheet 7)
26. Complete a learning contract for a grade. (Assignment Sheet 8)

Managing Competency-Based Education

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.
2. Review Teaching Suggestions section that follows. Plan for classroom activities.
3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.
4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.
5. Make a transparency from the transparency master included with this unit. This appears in the teacher edition only and is designed to be used with the following objective:

   TM 1—4-Tier Filing System (Objective 4)
6. Make copies of teacher supplements that you plan to distribute to students.
7. Obtain films, videotapes, posters, charts, and other items to supplement instruction of this unit.
8. Review instructions for evaluating student performance, and make copies of the unit evaluation form.

Delivery and Application

9. Provide students with unit of instruction.
10. Discuss unit and specific objectives.
11. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.
12. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Suggested Activities

Evaluation

13. Discuss the use of the Unit Evaluation Form with students. Select and discuss the rating scale that will be used for student evaluation.

14. Make copies of the written test. Add or modify test items as needed.

15. Give written test.

16. Compile assignment sheet ratings and written test score on the Unit Evaluation Form. Include any additional assignments.

17. Reteach and retest as required.

Teaching Suggestions

1. Find cartoons which illustrate management techniques.

2. Explain the terminology provided in Objective 1 on the information sheet.

3. For Assignment Sheet 1, consider the following:

   a. Gather examples of various classroom and laboratory layouts to illustrate different management techniques.

   b. Provide an instructional analysis for those students who do not have an existing program.

      Note: The introductory pages of most MAVCC instructional materials have an instructional analysis, a list of tools and equipment, and a list of references.

4. For Assignment Sheet 2, consider the following:

   a. Obtain filing indexes from different program areas.

   b. Develop an example of an instructional materials filing system.

Suggested Activites

c. Numerous filing systems have been designed to accommodate the specific needs of individual businesses, schools, and agencies which need a highly organized and efficient filing system. Encourage students to review one or more of the following supplementary references:

  - *Dictionary of Occupational Titles (DOT)* published by U.S. Department of Labor
  - *USOE Occupational Coding System* published by U.S. Office of Education
  - Dewey Decimal System, commonly used by all public libraries
  - *USOE Occupational Clusters*
  - *Agdex: A System for Classifying, Indexing, and Filing Agriculture Publications* by Howard L. Miller and Ralph J. Woodin and available from the American Vocational Association
  - *Filing: Distributive Education* published by Clemson University
  - Reference books on filing and records management will provide student with detailed descriptions of the various filing systems available.

d. Use TM 1 to illustrate a 4-tier filing system.

5. For Assignment Sheet 3, develop examples of completed progress charts.

6. For Assignment Sheet 4, consider the following:

   a. Obtain a list of performance standards for your state.

   b. Gather examples of competency profiles from your state and other states.

   c. Be prepared to discuss the strengths and weaknesses of the different rating scales.

7. For Assignment Sheets 5 and 6, consider the following:

   a. Discuss "why grades?".

   b. Have students discuss their grading pattern.

   c. Present procedure for developing a grading pattern.

      - Define categories.
      - Assign value to each category.

Suggested Activities

        - Calculate final grade.
        - Enter grades in record book.
        - Develop an attendance code.

    d. Use Teacher Supplement 1—Contract Grading to provide for additional discussion on grading patterns and learning contracts.

    e. The Florida Center for Instructional Computing
    University of South Florida
    College of Education - EDU 123 H
    Tampa, FL 33620
    (813) 974-3470
    has evaluated numerous software grade book packages

8. For Assignment Sheets 7 and 8, consider the following:

    a. Obtain examples of various learning contract forms.

    b. Obtain examples of completed contract forms.

    c. Consider having student develop a learning contract for this course or workshop.

9. Provide students with an opportunity to share their system for monitoring individual progress and maintaining individual records.

Resources Used in Developing This Unit

1. Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Write and Use Competency Profiles*. Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.

2. *Facilitator Training Manuals*. Stillwater, OK: Instructional Services Division, Oklahoma Department of Vocational and Technical Education, n.d.

3. Goodlad, John. *A Place Called School: Prospects of the Future*. New York: McGraw Hill Publishing Co., 1984.

4. Mager, Robert F. Developing Attitude Toward Teaching, or SMATs 'N "SMUTs. Second edition. Belmont, CA: Pitman Learning, Inc., 1984.

5. Oen, Urban T. *Construct Performance and Written Evaluation Instruments*. Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

Suggested Activities

6. Oen, Urban T. *Write a Student Performance Contract.* Addison, IL: Competency-Based Individualized Vocational Education Consortium, 1985.

7. *Oklahoma Minimum Criteria for Effective Teaching Performance.* Oklahoma City, OK: Oklahoma State Department of Education, 1986.

8. *Onward to Excellence: Making Schools More Effective.* Portland, OR: A research synthesis on effective schooling practices by Northwest Regional Educational Laboratory, 1984.

9. *Performance-Based Teacher Education Modules: Instructional Management (Category E).* Second edition. Athens, GA: American Association for Vocational Instructional Materials, n.d.

10. Powell, Cheryl R. *Competency-Based Curriculum Development Manual.* Mason City, IA: Northern Iowa Area Community College, 1987.

Suggested Supplemental Material

Performance-Based Teacher Education modules developed by the Center for Education and Training for Employment (CETE), The Ohio State University, may be ordered from AAVIM, 120 Driftmier, Engineering Center, University of Georgia, Athens, GA 30602, (404) 542-2586.

Managing Competency-Based Education

Answers to Assignment Sheets

Assignment Sheet 1 — Student performance will be evaluated according to criteria listed on assignment sheet and the criteria for each part as specified below:

Part A — Student should answer each question.
Part B — Student should have developed a plan to demonstrate when instructional materials will be taught.
Part C — Student should develop a complete list of instructional materials, tools, and equipment needed for student (class).

Assignment Sheet 2 — Student performance will be evaluated according to criteria listed on assignment sheet.

Assignment Sheet 3 — Student performance will be evaluated according to criteria listed on assignment sheet and by referring to Option A.

Personnel Security
Trade

Progress Chart

Date

What The Trainee Should Be Able To Do

	Names	1 A.S. 1 – Locate Security Devices	2 A.S. 2 – Complete a Security Checklist	3 A.S. 3 – Solve Management Problems	4 Unit 1 – Written Test	5 A.S. 1 – Prepare a Weekly Schedule	6 A.S. 2 – List Preventive Techniques	7 A.S. 3 – Identify Locations	8 A.S. 4 – Prepare a Poster	9 A.S. 5 – Make a Door Code Device	10 A.S. 6 – Complete a Crime Fact Sheet	11 A.S. 7 – Complete a Crime Checklist	12 A.S. 8 – Apply On-The-Job Procedures	13 Unit 2 – Written Test	14 A.S. 1 – Solve Problems	15 J.S. 1 – Simulate Self-Defense	16 Unit 3 – Written Test	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
1	Aulgur, Joanne																																													
2	Brannon, Robert																																													
3	Buck, Sue																																													
4	Fulkerson, Dan																																													
5	Hauf, Anita																																													
6	Huston, Jane																																													
7	Kellum, Mary																																													
8	Kruse, Tim																																													
9	Short, Dee																																													
10	Steward, Jim																																													
11																																														
12																																														
13																																														
14																																														
15																																														
16																																														
17																																														
18																																														
19																																														
20																																														
21																																														
22																																														
23																																														
24																																														

What The Trainee Should Know

Answers to Assignment Sheets

Assignment Sheet 4 — Student performance will be evaluated according to criteria listed on assignment sheet.

Assignment Sheet 5 — Student performance will be evaluated according to criteria listed on assignment sheet. Answers should include the following:

1. Ms. Hauf's grading pattern is shaky at best. She has not explained to Jim, or presumably to the rest of the class, just how grades are determined. She reports student's grades to them in letters (Jim got a C– on his exam), yet she used points to determine their final grade. Also, her sample of student performances is limited. Jim has a job related to the course, and evidently his employer is very satisfied with his on-the-job performance, yet Ms. Hauf has not included on-the-job experience in her grading system.

2. Ms Hauf is confused about her grading system, and has given Jim false information. A weight of .50 for exams and lab assignments does not mean that both contribute equally to the final grade. This is true because the number of points for exams (300) is greater than the number of points for lab assignments (100). Rather than counting as half, Jim's exams count as 75% of his grade. If Jim received a 70 on the last exam his grade would be calculated as follows:

   Exams (70 + 72 + 70) = 212 × .50 = 106
   Lab Assignments (5 @ 20) = 100 × .50 = 50
   156 = C

   If Jim gets a 100 on the last exam, it is impossible to get an A in the course:

   Exams (70 + 72 + 100) = 242 × .50 = 121
   Lab Assignments (5 @ 20) = 100 x .50 = 50
   171 = B

3. If Jim gets a B in the course, there is no way for his employer to know what a B means in terms of Jim's performance unless Ms. Hauf attaches a more specific evaluation of Jim's work to the grade report. A letter grade will not reflect the fact that Jim's job performance is outstanding, because it is an average of all his work.

Assignment Sheet 6 — Student performance will be evaluated according to criteria listed on assignment sheet. Possible answers may include:

1. Grading symbols are determined by the school and should be the same for all participants.

2. The number of categories is manageable. There should be no more than 7 and no fewer than 3.

3. The elements make logical sense for the individual's program. Ask for an explanation if logical sense is not clear.

Answers to Assignment Sheets

4. Job conditioning skills listed in the daily grade are observable and reasonable. Look for specific applications to specific programs, i.e., dress code, safety, etc.
5. Percentages, fractions, or total point values total 100%.
6. Weight distribution is fair.
7. Daily grade can be translated to values equivalent to other elements.
8. Attendance symbols are sufficiently different and can be easily discriminated (if attendance grade is in line with school policy).
9. When completed, the activity sheet should be checked and initialed by an administrator.

Answers to Assignment Sheets

Assignment Sheet 7 — Student performance will be evaluated according to criteria listed on assignment sheet and by referring to the following:

Student Performance Contract

Student Name John Doe ID Number 111-11-111
Program Desktop Publishing
Duty Produce a newsletter and multipage document
Starting Date September 8 Expected Completion Date October 14

	Task	Expected Completion Date	Actual Completion Date	Instructor Initials
1.	Proofread a document	Sept. 14		
2.	Determine specifications for a newsletter	Sept. 21		
3.	Determine specifications for a multi-page document	Sept. 28		
4.	Stack graphics and text	October 2		
5.	Produce a newsletter	October 9		
6.	Produce a multi-page document	October 23		
7.				
8.				

Plan cooperatively developed by and agreed to by:

Student Signature Date Instructor Signature Date

Note: This plan may be renegotiated upon request by the student or instructor when deemed necessary and mutually agreed upon by both parties.

Assignment Sheet 8 — Student performance will be evaluated according to criteria listed on assignment sheet and by referring to the Contract for Grade on the following page.

Answers to Assignment Sheets

Contract for Grade

This contract is entered into by Jane Darrow, student at Green Technical School, and Jim Spruge, teacher of Technical Training at Green Technical School. This contract is good for the nine-week period beginning March 15, 19 and ending May 1, 19 .

I, Jane Darrow, am contracting for a grade of A based on my mastering the objectives for Personnel Security during the nine-week period and my receiving an acceptable rating on my work habits and attendance.

Option 1: Requirements for an A

Receive a skilled rating on:

Locate security devices in and around your training station.
Complete a security checklist concerning your work environment.
Solve management problems.
Prepare a weekly schedule for transporting money to the bank.
List preventive techniques for burglaries and robberies.
Identify locations where a thief could be hidden in your training station.
Prepare an emergency procedure poster.
Make a door code device for determining an offender's height.
Complete a crime fact sheet.
Complete a crime vulnerability checklist.
Apply on-the-job security procedures in crime-related situations.
Solve problems related to personal assault.

Receive a minimum score of 85 percent on the written test for the following units of instruction:

1. Establishing a Secure Work Environment
2. Applying On-The-Job Security Procedures
3. Taking Precautions for Personal Safety

Option 2: Requirements for a B

Receive at least a moderately skilled rating on:

Locate security devices in and around your training station.
Complete a security checklist concerning your work environment.
Solve management problems.
Prepare a weekly schedule for transporting money to the bank.
List preventive techniques for burglaries and robberies.
Identify locations where a thief could be hidden in your training station.
Prepare an emergency procedure poster.

Answers to Assignment Sheets

Contract for Grade (continued)

Make a door code device for determining an offender's height.
Complete a crime fact sheet.
Complete a crime vulnerability checklist.
Apply on-the-job security procedures in crime-related situations.
Solve problems related to personal assault.

Receive a minimum score of 85 percent on the written test for the following units of instruction:

1. Establishing a Secure Work Environment
2. Applying On-The-Job Security Procedures
3. Taking Precautions for Personal Safety

Option 3: Requirements for a C

Receive at least a limited skill rating on:

Locate security devices in and around your training station.
Complete a security checklist concerning your work environment.
Solve management problems.
Prepare a weekly schedule for transporting money to the bank.
List preventive techniques for burglaries and robberies.
Identify locations where a thief could be hidden in your training station.
Prepare an emergency procedure poster.
Make a door code device for determining an offender's height.
Complete a crime fact sheet.
Complete a crime vulnerability checklist.
Apply on-the-job security procedures in crime-related situations.
Solve problems related to personal assault.

Receive a minimum score of 85 percent on the written test for the following units of instruction:

1. Establishing a Secure Work Environment
2. Applying On-The-Job Security Procedures
3. Taking Precautions for Personal Safety

It is understood that 5 percent of my final grade will be based on an acceptable rating on my work habits. Also, 5 percent of my final grade will be based on attendance. This 10 percent may reduce my final grade by one letter. The grading pattern for the course has been explained to me by my teacher.

Signed: ____________________ Date: ________________
(Student)

Signed: ____________________ Date: ________________
(Teacher)

Managing Competency-Based Education

Answers to Written Test

1.

a.	9	e.	7	i.	1
b.	10	f.	3	j.	2
c.	4	g.	5		
d.	6	h.	8		

2. Answer should include:

   a. General management
   b. Environmental management
   c. Tool and equipment management
   d. Maintenance of equipment
   e. Managing student participation
   f. Scheduling facility use

3. Answer should include two of the following:

   a. Determine time available for instruction
   b. Sequence units of instruction
   c. Determine physical facilities and equipment needed and available
   d. Consult advisory committee

4. Answer should include four of the following:

   a. Organize teaching and instructional materials for convenient storage and quick retrieval
   b. Reduce a cluttered look in the classroom
   c. Preserve instructional materials and visual aids
   d. Keep records and reports accessible for current and future use.
   e. Remove out-of-date materials
   f. Become a more efficient and well organized teacher

5. Answer should include three of the following:

   a. Types of instructional materials used
   b. Kinds of storage facilities that are available
   c. Types of instructional and laboratory equipment used
   d. Types of records to be maintained by teacher
   e. Kind and amount of occupational information to be filed

Answers to Written Test

6. Answer should include three of the following:
    a. What materials should be filed?
    b. How materials should be filed?
    c. Where should materials be filed?
    d. What equipment and supplies are needed?
    e. What is your plan to update and discard out-of-date materials?

7. a. To provide a basis for student guidance to assist students in either reaching or exceeding their goals
    b. To document tasks mastered

8. a. 5
    b. 3
    c. 1
    d. 4
    e. 2

9. a. Identifies tasks student must do to complete the program or course
    b. Assists teacher to monitor student progress
    c. Allows students to check their progress

10. Answer should include three of the following:
    a. Provide an individual profile of where student stands in achieving the competencies of the course or program.
    b. Provide an instrument of accountability.
    c. Provide specific information for prospective employers.
    d. Provide a reporting system which supplements the present grading system.
    e. Provide a program description.

11. a. 3
    b. 1
    c. 4
    d. 2

12. a. Background information
    b. Rating scale or checklist
    c. Units of instruction or duty areas
    d. List of minimum competencies or tasks

13. a, c, d, f, g

Answers to Written Test

14. Answer should include:

    a. Sets clear expectations
    b. Based upon a wide area of student skills
    c. Uses established standards or criteria for all students
    d. Uses clear, consistent symbols in record system

15. a. Awarding grades for the number of objectives mastered and the amount of time taken
    b. Utilizing learning contracts
    c. Assigning points and weights for learning activities that have been completed
    d. Converting average of student performance ratings and objectives into a grade

16. a. Tasks
    b. Time
    c. Progress
    d. Mastery
    e. Competency
    f. Deadlines

17. a. 1 d 4
    b. 2 e. 5
    c. 3 f. 6

18. a. Student data
    b. Grading information
    c. Tasks to be mastered
    d. Order of task mastery
    e. Signature of student and instructor
    f. Program data
    g. Dates for task completion

Managing Competency-Based Education

Written Test

Name ______________________________ Score ____________

1. Match the terms on the right with their correct definitions

______a. Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

______b. Materials and/or information necessary for one or more instructional periods for the teaching/learning process in order to reach the unit objective

______c. Plan to provide feedback based on identified criteria and rationale

______d. An agreement between a student and a teacher which details the learning activities a student will complete in a given period of time

______e. A form to track a student's progress through instruction

______f. A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

______g. A change in behavior due to an educational experience

______h. Process in which the student progresses at his/her own rate toward stated objectives

______i. A learned behavior which can be repeated to a predetermined standard

______j. Record of a student's ability to perform specified tasks

1. Competency
2. Competency profile
3. Duty
4. Grading pattern
5. Learning
6. Learning contract
7. Progress chart
8. Self-paced instruction
9. Task
10. Unit of instruction

Written Test

2. State the common aspects of maintaining and managing the physical environment.
   a. ______________________________
   b. ______________________________
   c. ______________________________
   d. ______________________________
   e. ______________________________
   f. ______________________________
3. State two factors which affect long-range planning.
   a. ______________________________
   b. ______________________________
4. State four reasons for developing and maintaining a filing system.
   a. ______________________________
   b. ______________________________
   c. ______________________________
   d. ______________________________
5. State three factors that will determine the filing system to use.
   a. ______________________________
   b. ______________________________
   c. ______________________________
6. State three decisions to make in starting and maintaining a filing system.
   a. ______________________________
   b. ______________________________
   c. ______________________________

Written Test

7. State two reasons for monitoring student progress.

a. ____________________

b. ____________________

8. Arrange in order steps in developing a system to monitor student progress. Place a "1" by the first step, a "2" by the second step, and so on.

______a. Develop a method to certify competence.

______b. Develop a grading pattern that is fairly administered and based on identified criteria.

______c. Develop a method to plan student work.

______d. Develop a method to document task mastery.

______e. Develop a method to monitor student progress.

9. State three reasons for developing a progress chart.

a. ____________________

b. ____________________

c. ____________________

10. State three purposes of competency profiles.

a. ____________________

b. ____________________

c. ____________________

11. Arrange in order the guidelines for using competency profiles. Place a "1" by the first step, a "2" by the second step, and so on.

______a. Upon student's completing or leaving program, the teacher should file student's completed profile in the student's permanent record.

______b. Upon student's entry into program, the teacher should begin a profile.

______c. Upon request, and with student's permission, the teacher will provide a copy of the student's profile as part of the educational placement process.

______d. The teacher should keep student's profile updated and on file.

12. List information to include on a competency profile.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

13. Select from a list purposes of grading patterns. Place an "X" beside each item that is a purpose.

______a. Provide a basis for student guidance.

______b. Facilitate instruction.

______c. Measure teacher effectiveness.

______d. Establish and maintain standards.

______e. Evaluate teacher outcomes.

______f. Determine student performance.

______g. Establish a basis for grades.

14. State the four characteristics of a good grading pattern.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

Written Test

15. State the four approaches for assigning grades.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

16. Complete statements concerning goals of a learning contract. Write your answer for each statement in the blank provided.

a. Plan a student's work by developing a sequential list of __________ to be mastered.

b. Allow flexibility to negotiate the contract based upon mutual agreement and within set __________ limits.

c. Monitor student's __________.

d. Document task __________ for future reference.

e. Certify __________.

f. Identify __________ and due dates.

17. Arrange in order steps in the development of a learning contract. Place a "1" by the first step, a "2" by the second step, and so on.

______a. Help student select a realistic specific goal.

______b. Determine if student has desired prerequisites for success.

______c. Prescribe appropriate alternative instruction, if necessary.

______d. Identify tasks necessary to arrive at goals.

______e. Write learning contract to develop skills necessary to achieve goals.

______f. Determine the student's starting point in the curriculum.

157

Written Test

18. State the items in a learning contract.

a. ____________________

b. ____________________

c. ____________________

d. ____________________

e. ____________________

f. ____________________

g. ____________________

Managing Competency-Based Education

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Develop a Plan to Implement Competency-Based Instructional Materials into an Existing Program Rating ______

Comments: ____

____

Assignment Sheet 2—Develop a Plan for an Appropriate Filing System Rating ______

Comments: ____

____

Assignment Sheet 3—Develop a Progress Chart Rating ______

Comments: ____

____

Assignment Sheet 4—Write a Plan for Using a Competency Profile in a Program Rating ______

Comments: ____

____

Assignment Sheet 5—Apply Techniques in Establishing a Grading Pattern Rating ______

Comments: ____

____

Assignment Sheet 6—Develop a Grading Pattern Rating ______

Comments: ____

____

Assignment Sheet 7—Complete a Student Performance Contract Rating ______

Comments: ____

____

Unit Evaluation Form

Assignment Sheet 8—Complete a Learning Contract for a Grade Rating ______

Comments: ____

____

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ____

____

Teacher Signature ______________________ Date __________

Student Signature ______________________ Date __________

*Permission to duplicate this form is granted.

190

Managing Competency-Based Education

Learning Steps

Name ____

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Study** Information Sheets, Objectives 1 through 3, pp. 3-5.

______ 3. **Do** Assignment Sheet 1—Develop a Plan to Implement Competency-Based Instructional Materials into an Existing Program, pp. 33-38.

______ 4. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 5. If evaluation is not satisfactory, repeat steps 2 through 4.

______ 5. **Study** Information Sheets, Objectives 4 through 6, pp. 5 and 6.

______ 6. **Do** Assignment Sheet 2—Develop a Plan for an Appropriate Filing System, pp. 39-42.

______ 7. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 8. If evaluation is not satisfactory, repeat steps 5 through 7.

______ 8. **Study** Information Sheets, Objectives 7 through 9, pp. 6 and 7.

______ 9. **Do** Assignment Sheet 3—Develop a Progress Chart, pp. 43-46.

______ 10. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 11. If evaluation is not satisfactory, repeat steps 8 through 10.

______ 11. **Study** Information Sheets, Objectives 10 through 12, pp. 7 and 8.

______ 12. **Do** Assignment Sheet 4—Write a Plan for Using a Competency Profile in a Program, pp. 47-50.

______ 13. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 14. If evaluation is not satisfactory, repeat steps 11 through 13.

______ 14. **Study** Information Sheets, Objectives 13 through 15, pp. 8-10.

Learning Steps

______15. **Read** Student Supplement 2—The Grading Pattern, pp. 17-19, and Student Supplement 3—A Grading Pattern Model, pp. 21-30.

______16. **Do** Assignment Sheet 5—Apply Techniques in Establishing a Grading Pattern, pp. 51 and 52, and Assignment Sheet 6—Develop a Grading Pattern, pp. 53-55.

______17. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 18. If evaluation is not satisfactory, repeat steps 14 through 17.

______18. **Study** Information Sheets, Objectives 16 through 18, pp. 11 and 12 and Student Supplement 4—Example of a Learning Contract, p. 31.

______19. **Do** Assignment Sheet 7—Complete a Student Performance Contract, pp. 57 and 58 and Assignment Sheet 8—Complete a Learning Contract for a Grade, pp. 59-63.

______20. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 21. If evaluation is not satisfactory, repeat steps 18 through 20.

______21. **Take** Written Test. (See teacher.) If you score 85 percent or above, continue to step 22. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______22. **Sign** Unit Evaluation Form to verify ratings received on assignment sheets and written test.

***Permission to duplicate this form is granted.**

Managing Competency-Based Education

Teacher Supplement 1—Contract Grading

Contract grading allows the student to make a contract with the teacher for a particular scope of work and to receive a predetermined grade after meeting the terms of the contract. Contract grading is most effective if you explain how the system works and then give the student two or three weeks to decide on a contract. While two or three weeks may seem a bit long, it is crucial that students understand the system thoroughly before making a commitment.

Several types of contract grading are used, each offering more or less freedom to the student and demanding different degrees of maturity and responsibility. The most flexible type of contract lists the minimum requirements which must be met by students to receive a "D" or a "C". Students who contract for a "B" are then allowed to select (from a list of possible assignments) the additional assignment they wish to do. Students may propose special assignments they will do to receive an "A".

Contracts are cumulative in that work which receives a low grade must be completed satisfactorily before the student can receive higher level grades. Additionally, all work is graded S or U. If any work is judged to be unsatisfactory, the student is told why it is unsatisfactory, and allowed to revise it until it is acceptable. If you use this type of contract grading, you must be careful that contracts are not simply quantity-oriented, but quality-oriented as well. That is, students should not receive a "B" simply by doing more of the same calibre work students do who contract for a "C".

Another type of contract grading gives students complete freedom to do whatever they choose to receive their final grade. As the teacher, you ask students to write down what they plan to do for the grading period, then review each student's proposal and decide whether it is acceptable or not. This type of contract grading is flexible and informal, and very appropriate for post-secondary students. Most high school students, however, are not able to plan a scope of work without guidance from the teacher.

Variable grade contracts are quite useful in vocational courses. These are contracts which specify a scope of work, but allow students to decide how much weight each type of work will have in determining their final grade. Students are free to assign more weight to their strong areas (e.g., class reports) than to their weak areas (e.g., written examinations) in contracting for their final grade. Since the teacher sets a minimum and maximum percentage for each category of work, the student must demonstrate at least minimal performance in each area.

Variable contracts allow you to assess student performance on either a traditional (A, B, C, D, F) or a competency (S/U) basis. Variable contracts may be incorporated into the S/U grading system by letting students redo unacceptable work until a satisfactory level of performance is attained.

You should realize that contract grading requires more time than many other grading systems because each student's grade is determined differently according to his/her individual contract. Contract grading also takes more time if you allow students to redo work until they are satisfied with their performance. However, contract grading is highly motivating to many students, and gives them an opportunity to develop self-discipline and personal responsibility.

Teacher Supplement 1

Laboratory Variable Grade Contract

Directions: Select the percent value you wish each of the following activities to count for your quarter laboratory grade. You may choose any value within the indicated limits, providing the total for all items equals 100%. Enter the percent value you select in the blank to the left of each item. Complete both copies and return them to the teacher. This contract is final and may not be renegotiated during the quarter.

% Desired	Experiences to be Evaluated
______%	30-60%. Complete and accurate records of school laboratory and on-the-job experiences in the record book provided.
______%	10-40%. Laboratory work habits as shown on the Co-op Student Evaluation Form completed by the teacher.
______%	10-30%. Laboratory performance tests; 5-10 will be given during the quarter.
______%	0-15%. Home improvement projects as approved by the teacher at the beginning of the quarter and evaluated by the teacher before the final week.

________________	__________	________________	__________
Signature of Student	Date	Signature of Teacher	Date

Source: Richard Gustafson, Montgomery County Joint Vocational School, Clayton, Ohio.

Teacher Supplement 1

Related Class Variable Grade Contract

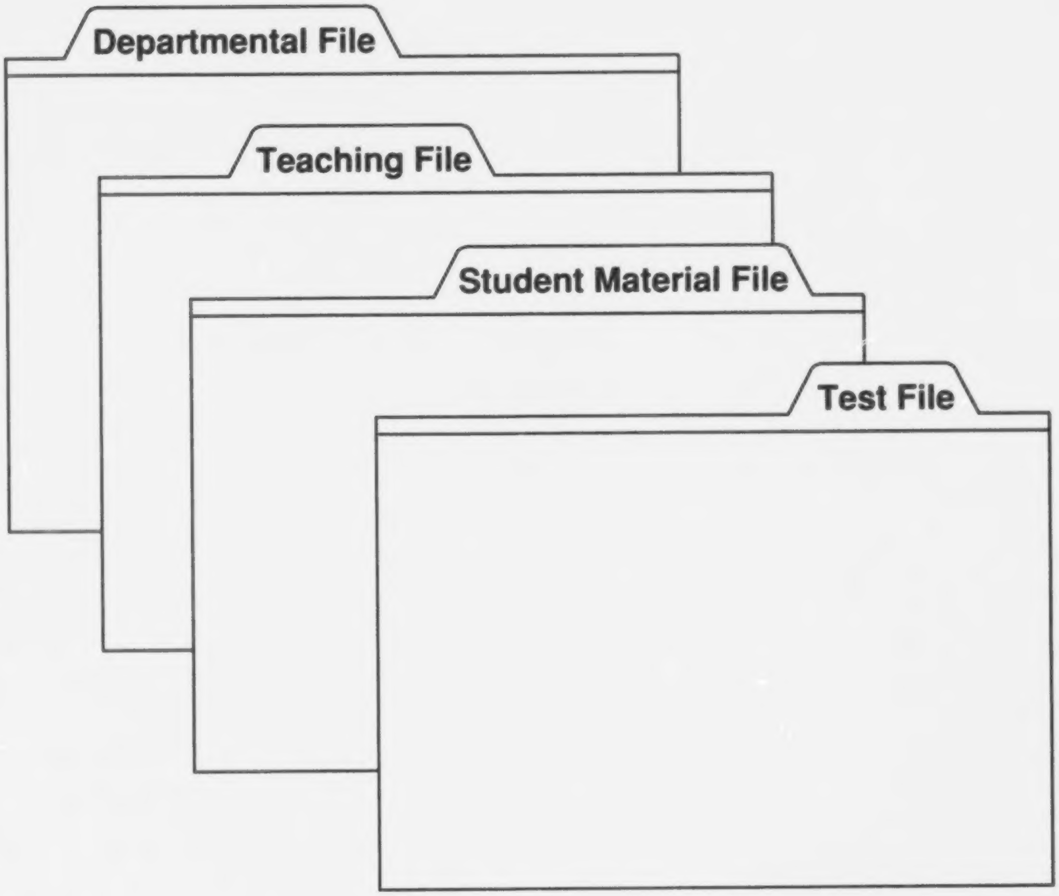
Directions: Select the percent value you wish each of the following activities to count for your quarter laboratory grade. You may choose any value within the indicated limits, providing the total for all items equals 100%. Enter the percent value you select in the blank to the left of each item. Complete both copies and return them to the teacher. This contract is final and may not be renegotiated during the quarter.

% Desired	**Experiences to be Evaluated**
_____%	30-60%. Complete and accurate records of school laboratory and on-the-job experiences in the record book provided.
_____%	10-40%. Laboratory work habits as shown on the Co-op Student Evaluation Form completed by the teacher.
_____%	10-30%. Laboratory performance tests; 5-10 will be given during the quarter.
_____%	0-15%. Home improvement projects as approved by the teacher at the beginning of the quarter and evaluated by the teacher before the final week.
_____%	5-20%. Written final examination.
_____%	5-20%. Relevant class participation and behavior consistent with meeting the goals of the program.

____________________	____________	____________________	____________
Signature of Student	Date	Signature of Teacher	Date

Source: Richard Gustafson, Montgomery County Joint Vocational School, Clayton, Ohio.

4-Tier Filing System


Departmental File
Teaching File
Student Material File
Test File

Managing Competency-Based Education

Information Sheet

1. **Terms and definitions**

   a. **Competency** — A learned behavior which can be repeated to a predetermined standard

   b. **Competency profile** — Record of a student's ability to perform specified tasks

   c. **Duty** — A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

   d. **Grading pattern** — Plan to provide feedback based on identified criteria and rationale

   e. **Learning** — A change in behavior due to an educational experience

   f. **Learning contract** — An agreement between a student and a teacher which details the learning activities a student will complete in a given period of time

   Examples: Student performance contract, contract for grade

   g. **Progress chart** — A form to track a student's progress through instruction

   h. **Self-paced instruction** — Process in which the student progresses at his/her own rate toward stated objectives

   i. **Task** — Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

   j. **Unit of instruction** — Materials and/or information necessary for one or more instructional periods for the teaching/learning process in order to reach the unit objective

2. **Common aspects of maintaining and managing the physical environment**

   Note: A well-managed physical environment is a source of satisfaction and pleasure. The teacher works with a minimum of stress and a great sense of accomplishment. The students learn the skills and find joy in learning. School administrators appreciate the efficient way in which the community's resources are being used.

   a. General management

   Note: The physical environment is organized and managed so that all students are productive.

Information Sheet

b. Environmental management

Note: This includes proper heating, healthful ventilation, adequate lighting, and controlled noise level.

c. Tool and equipment management

Note: Tools are devices or instruments used in the course of work. They are in constant use by students, and must be readily available to them. Yet, they must be managed by the teacher to keep the tools in good condition and under control.

d. Maintenance of equipment

Note: It will be done much better, and involve less of the teacher's time and effort, if the whole maintenance procedure is planned and carried out systematically.

e. Managing student participation

Note: Students can participate in physical environment management in two basic ways: (1) routine cleanup and (2) in the day-to-day running of the laboratory.

f. Scheduling facility use

Note: The teacher must work cooperatively with the administration and with others involved to establish policies fair to all groups. Policies should be established to protect the facilities and equipment.

3. **Factors which affect long-range planning**

Note: Curriculum is a total educational process that involves the relationship of staff, budget, facilities, students, extracurricular activities, and instructional materials.

a. Determine time available for instruction.

Examples: Outside activities, seasons, weather, type of program, competitive events

b. Sequence units of instruction.

Note: Consider difficulty of content, number of performance objectives, and outside activities.

Information Sheet

c. Determine physical facilities and equipment needed and available.

d. Consult advisory committee.

Note: The advisory committee will help prioritize sequence of instruction according to regional and local employability needs.

4. **Reasons for developing and maintaining a filing system**

a. Organize teaching and instructional materials for convenient storage and quick retrieval.

b. Reduce a cluttered look in the classroom.

c. Preserve instructional materials and visual aids.

d. Keep records and reports accessible for current and future use.

e. Remove out-of-date materials.

f. Become a more efficient and well organized teacher.

5. **Factors that will determine the filing system to use**

a. Kinds of storage facilities that are available

Examples: Vertical files, horizontal files, portfolio, computer, cabinets, card index, boxes

b. Types of instructional and laboratory equipment used

Examples: Tools, instructional equipment, specialized laboratory equipment

c. Types of instructional materials used

Examples: Instructional units, LAPs, resource and reference materials, display materials, computer disks, filmstrip and slides, handouts, transparencies

d. Types of records to be maintained by teacher

Examples: Student personnel records, assessment test scores, special needs of students, progress charts, grade or record book

e. Kind and amount of occupational information to be filed

Example: Occupational opportunities available to student

Information Sheet

6. **Decisions to make in starting and maintaining a filing system**

    a. What materials should be filed?

    b. How should materials be filed?

    Examples: Alphabetically, numerically

    c. Where should materials be filed?

    d. What equipment and supplies are needed?

    e. What is your plan to update and discard out-of-date materials?

7. **Reasons for monitoring student progress**

    a. To provide a basis for student guidance to assist students in either reaching or exceeding their goals

    b. To document tasks mastered

8. **Steps in developing a system to monitor student progress**

    a. Develop a method to plan student work.

    Examples: Learning contract, progress chart, individualized education plan (IEP)

    b. Develop a method to monitor student progress.

    Examples: Progress chart

    c. Develop a grading pattern that is fairly administered and based on identified criteria.

    d. Develop a method to document task mastery.

    Examples: Progress chart, unit of instruction evaluation form, written and performance tests

    e. Develop a method to certify competence.

    Examples: Certificate, competency profile

Information Sheet

9. **Reasons for developing a progress chart**

   a. Identifies tasks student must do to complete the program or course

   b. Assists teacher to monitor student progress

   Note: The teacher can easily identify students who are near completion and/or are having difficulties.

   c. Allows students to check their progress

10. **Purposes of competency profiles**

    a. Provide an individual profile of where the student stands in achieving the competencies of the course or program.

    b. Provide an instrument of accountability.

    Note: Teacher, school personnel, parents, and student can track student's progress.

    c. Provide specific information for prospective employers.

    Note: A profile assists school personnel and students in the job placement process. Also assists employer in the hiring, supervision and training of program completers.

    d. Provide a reporting system which supplements the present grading system.

    e. Provide a program description.

    Note: A competency profile can assist school personnel and students in course selection. It may also serve as a public relations tool for information relating to program.

11. **Guidelines for using competency profiles**

    Note: A school should develop a process or procedure for using competency profiles.

    a. Upon student's entry into program, the teacher should begin a profile.

    Example: Student's name, anticipated completion date

    b. The teacher should keep student's profile updated and on file.

    c. Upon student's completing or leaving program, the teacher should file student's completed profile in the student's permanent record.

    d. Upon request, and with student's permission, the teacher should provide a copy of the student's profile as part of the educational placement process.

    Examples: Students, prospective employers, educational institutions, parents

Information Sheet

12. Information to include on a competency profile

a. Background information

Examples: Student's name, teacher's name, program name, occupational goal

b. Rating scale or checklist

Note: It is crucial that established and clear criteria are followed.

Examples:

Option A	Option B
4 - Skilled—Can perform task with no additional instruction.	Yes—Can perform task with no additional training.
3 - Moderately skilled—Has performed task during instruction; limited additional instruction may be required.	No—Is unable to perform task satisfactorily.
2 - Limited skill—Has performed task during instruction; additional instruction is required to develop skill.	
1 - Unskilled—Is familiar with process, but is unable to perform task.	
0 - No exposure	

c. Units of instruction or duty areas

d. List of minimum competencies or tasks

Note: Competency statements should contain a measurable action verb, should be a valid competency, should state minimum level of competency, and should be numbered or coded.

13. Purposes of grading patterns

Note: Research on effective learning recommends that the teacher utilize a grading pattern that is fairly administered and based on identified criteria.

a. Determine student performance.

b. Measure teacher effectiveness.

c. Establish a basis for grades.

Information Sheet

d. Establish and maintain standards.

e. Provide a basis for student guidance.

Examples: Discover learning difficulties; student motivation

14. Characteristics of a good grading pattern

a. Sets clear expectations

b. Based upon a wide area of student skills

Note: An effective grading pattern must reflect student performance at all skill levels. This includes cognitive-knowledge, psychomotor-manipulative, and affective-attitude skill levels.

c. Uses established standards or criteria for all students

d. Uses clear, consistent symbols in record system

15. Approaches for assigning grades

a. Awarding grades for the number of objectives mastered and the amount of time taken

Example: Teacher tells students how many objectives they must master within a grading period to receive an A, B, or C.

Note: This approach is not compatible with self-paced, individualized instruction because slower students are punished and faster students receive a higher grade.

b. Utilizing learning contracts

Example: Allows the student and teacher to make an agreement specifying how much work must be accomplished within a given period of time to receive an A, B, or C.

Information Sheet

c. Assigning points and weights for learning activities and objectives that have been completed

Example:

Weighted Points Grading System

Type of Evaluation	Points		Weight		Weighted Points
Posttests (on Objectives)	400	×	30%	=	120
Checklists (on Objectives)	400	×	50%	=	200
Quizzes (on Objectives)	200	×	10%	=	20
Learning Activities	50	×	5%	=	2.5
Class Notes	50	×	5%	=	2.5
			100%		345 Poss. Pts.

d. Converting average of student performance ratings on objectives into a grade

Example: Ratings for performance tests and written test for a unit of instruction can be averaged, and the final score can be converted to a letter grade for that unit. The final rating reflects a summary of the student's ability to perform all tasks and does not provide meaningful information on separate tasks.

5 = Consistently exceeds standard when performing task
4 = Meets standard when performing task
3 = Requires periodic assistance when performing task
2 = Requires constant assistance when performing task
1 = Is unable to perform task

Assignment Sheet — #1 #2 #3 #4

$5 + 4 + 4 + 3 = \frac{16}{4} = 4$ (average or ratings on assignment sheets)

Average Rating		Grade
5	=	A
4	=	B
3	=	C
2	=	D
1	=	F

Student's Average Grade: B

Information Sheet

16. Goals of a learning contract

a. Plan a student's work by developing a sequential list of tasks to be mastered.

Examples: Individualized Education Plan (IEP); long-range plan

b. Allow flexibility to negotiate the contract based upon a mutual agreement and within set time limits.

c. Monitor student's progress.

Note: Check off tasks as student masters them.

d. Document task mastery for future reference.

e. Certify competency.

f. Identify deadlines and due dates.

17. Steps in the development of a learning contract

a. Help student select a realistic, specific goal.

Note: Considerations in setting the goal should include time available, personal interest, and resources available.

b. Determine if student has desired prerequisites for success.

Examples: Physical disabilities, language or cultural barriers, poor writing and reading skills, poor math ability

c. Prescribe appropriate alternate instruction, if necessary.

Example: Added at the beginning of program in addition to tasks to be completed, have some other program or support service within school provide alternatives

d. Identify tasks necessary to arrive at goals.

e. Write learning contract to develop skills necessary to achieve goals.

Note: Develop a contract that commits the student to following through and complete his/her training.

f. Determine the student's starting point in the curriculum.

Example: A student may test out of any specific task previously mastered.

Information Sheet

18. Items in a learning contract

a. Student data

Examples: Name, social security number, address, phone number, other necessary data

b. Grading information

Examples: Entrance date, grading scale, necessary school information, date and mastery of each task

c. Tasks to be mastered

Note: This is usually for a specified time period.

d. Order of task mastery

Note: This prevents bottlenecks on use of limited equipment.

e. Signature of student and instructor

Note: This is to verify agreement of contract.

f. Program data

Examples: Program title, specific occupational goal

g. Dates for task completion

Note: Dates help students pace themselves.

Managing Competency-Based Education

Student Supplement 1—Personnel Security Instructional Analysis

Job Training: What the Worker Should Be Able to Do Psychomotor)

Related Information: What The Worker Should Know (Cognitive)

Unit 1: Establishing a Secure Work Environment

1. Terms and definitions
2. Types of business-related crimes
3. Steps in establishing a security program
4. Employer/employee responsibilities concerning security training
5. Security factors in facility design
6. Environmental security devices
7. Security of business keys
8. Means of employee identification
9. Indicators of high risk employees
10. Ways to control internal theft
11. Locate security devices in and around your training station
12. Complete a security checklist concerning your work environment
13. Solve management problems

Unit 2: Applying On-The-Job Security Procedures

1. Terms and definitions
2. Recommended opening procedure for business establishments
3. Recommended closing procedure for business establishments
4. Door security procedures during business hours
5. Precautions for handling money

Student Supplement 1

Job Training: What the Worker Should Be Able to Do Psychomotor)

Related Information: What The Worker Should Know (Cognitive)

6. Transporting money to the bank
7. Techniques for the prevention of burglaries
8. Most important factors in committing a robbery
9. Techniques for the prevention of robberies
10. Procedure for reporting a robbery
11. Ways to prevent violence during a robbery
12. Basic types of weapons
13. Types of information included on a crime fact sheet
14. Procedure for providing a physical description of the robber/assailant
15. Procedures for handling telephone threats
16. Procedure to follow in the event of a demonstration
17. Plans for an emergency evacuation
18. Prepare a weekly schedule for transporting money to the bank
19. List preventive techniques for burglaries and robberies
20. Identify locations where a thief could be hidden in your training station
21. Prepare an emergency procedure poster
22. Make a door code device for determining an offender's height
23. Complete a crime fact sheet
24. Complete a crime vulnerability checklist
25. Apply on-the-job security procedures in crime-related situations

Unit 3: Taking Precautions for Personal Safety

1. Terms and definitions
2. Precautions to take against possible attacks
3. Precautions for leaving work after dark
4. Precautions for walking home after dark

Student Supplement 1

Job Training: What the Worker Should Be Able to Do Psychomotor)	Related Information: What The Worker Should Know (Cognitive)
	5. Precautions for driving home late at night
	6. Ways to prevent rape
	7. Procedure to follow if rape occurs
8. Solve problems related to personal safety	
9. Simulate self-defense against personal assault	

Managing Competency-Based Education

Student Supplement 2—The Grading Pattern

Grading is one of the most difficult responsibilities of teaching. Yet few of us come to our first day of class equipped with the skills to develop a fair, consistent and defensible grading system. We know that grading must be fair and must reflect the quality of a student's work. But we seldom know how to create a valid and effective system or how to take advantage of the other important functions and uses of the grading process.

Rationale For Change	The primary purpose of student evaluation is to monitor student progress and check teaching effectiveness. But grading is also a process that can profoundly affect a student's self-perception and challenge a teacher's ethics and self-confidence. While grading should be a tool to provide concrete feedback and to promote student success, it often becomes a tool for control and punishment.
Job Conditioning Skills	Teachers need to bring greater emphasis to job conditioning skills. If we can justifiably and fairly evaluate these skills, we are serving our students and their employers more effectively.
Accountability	However, current concern with accountability for evaluations and job recommendations has put additional pressure on teachers to avoid grading the "intangibles" such as attendance, attitude, perseverance, personal appearance, and dependability, even though we know that these are the very criteria that employers value.
Minimum Criteria	Effective schooling research recommends that: The teacher utilizes grading patterns that are fairly administered and based on identified criteria.
Administrative Support	The summary of effective schooling research indicates significant, positive improvement in learning when administrators at the school and district levels monitor student progress and teachers provide immediate feedback.

Student Supplement 2

Advantages of an Effective Grading Pattern

A quality grading pattern can contribute to effective instruction in several important ways. Teachers are aware that grades can aid in student motivation, promote student success, and encourage desired student performance. In addition, an effective grading pattern will provide teachers with tools to:

- Measure teaching effectiveness.
- Re-evaluate course content.
- Establish and maintain standards.
- Provide a basis for student guidance.
  - Indicate a student's rate of learning.
  - Reveal learning difficulties.
- Document student progress.
- Support grading practices when grades are challenged.
- Make student records easily accessible to administrators, parents, students, and substitute teachers.

Characteristics of an Efficient and Well-Organized Grading Pattern

If you asked experienced teacher to identify the characteristics of an effective grading pattern, they would probably come up with a list similar to this one. New teachers, however, may find it difficult to anticipate what seasoned teachers have discovered by trial and error. According to *Determine Student Grades*, Module D-5, published by the Center on Education and Training for Employment (CETE) at Ohio State University, an efficient and well-organized grading pattern is as follows:

Characteristics of a Good Pattern

1. Should consume a minimum of the teacher's time
2. Should be based on criteria that are clearly identified and clearly communicated
3. Should be based upon a wide area of student responses and accomplishments and must include a measurement of these skills:
   a. Cognitive skills or technical knowledge
   b. Psychomotor skills or job skill competencies
   c. Affective skills or work ethics and attitudes

Student Supplement 2

4. Should be frequent and regular
5. Should be fair
6. Students should have access to their grades
7. Final grades should be permanent, except in the case of extreme mistakes by the teacher
8. Should provide defensible documentation of student performance

Managing Competency-Based Education

Student Supplement 3—A Grading Pattern Model

The grading pattern presented in this unit encompasses the characteristics as stated in Student Supplement 2—The Grading Pattern. It presents ways to make grading easier and more effective and suggested techniques to save time and insure the validity of the grading system.

The Model

This grading pattern model was developed by Kent Cooper, Principal of Gordon Cooper Area Vo-Tech School, Shawnee, Oklahoma. It is offered as an example of a workable, fair system of evaluation and of recording student performance. Many teachers will adopt and integrate the pattern as it is presented; others will change it to fit specific needs.

The grading pattern is easy to understand and easy to use. It is clear and straightforward. It encourages fairness and objectivity.

Components

The model proposed in the unit contains four types of grades: daily, technical skills and written performance, test, and attendance. Comprehensive record-keeping and an attendance code complete the pattern. Together these grades allow the teacher to evaluate and report behavior, attitude, and performance and to maintain accountable records.

1. **The Daily Grade**

   The daily grade in this model provides a basis for objective credibility in evaluating job conditioning skills such as behavior and attitudes, and work ethic considerations (affective performance). The teacher will select the attitudes and behaviors essential for success in their area. Daily grades may include criteria such as arriving on time, using time well, teamwork and cooperation, contributing to discussions, and maintaining a professional attitude.

   For example, the business teacher can evaluate appropriate dress and rate neatness of the work station and other job conditioning skills. Health care teachers can use daily grades to reflect preparation for class, willingness to perform and personal cleanliness. All teachers can use the daily grade to indicate shop or lab discipline and clean-up procedures, care of tools, consideration of others and customer relations.

2. **Performance Grade**

   The grade for technical and written performance provides a means of objectively grading for assignments and/or theory, homework, projects, and lab work as students learn. The performance grade is particularly useful for tracking a student's rate of learning and for identifying learning problems.

Student Supplement 3

"Performance" is defined and evaluated as:

- Quality and amount of work accomplished within a given time.
- Accomplishment of work based on stated criteria.
- Work follows safety practices.

Some teachers separate grades for technical skills and written work, giving each type of activity its own weight within the overall grading pattern.

The performance grade measures:

- COGNITIVE PERFORMANCE — Students' technical knowledge on assignment sheets or other written assignments;

and/or

- PSYCHOMOTOR PERFORMANCE — Competencies on job sheets or other hands-on activities and assignments.

3. Test Grades

Test grades provide an objective evaluation of mastery. The model provides a way to give a weight value to all types of tests according to their relative importance in your program.

EXAMPLE:

Written tests	10% of total test grade
Quizzes	5%
Unit tests	10%
9-weeks test	25%
Skill performance tests	50%
Total	100%

4. Attendance Grade

The attendance grade in this pattern is an objective grade. (The accumulation of points accrued on a daily basis.)

The attendance grade is an option to be accepted as school or district policy. Attendance points are to be accrued, and under no circumstances are teachers ethically or legally empowered to deduct grade points from students' earned grades for absences.

Student Supplement 3

As schools focus more on the work ethic and on reinforcing job conditioning skills, many teachers and administrators support a meaningful attendance grade in the grading pattern. Attendance at school is equivalent to dependability on a job. In this model, absences affect the final grades in the same way that absences from work affect take-home pay: You can't earn money if you're not on the job and you can't get attendance points if you're not there.

In addition, attendance records are objective information and can be included with the competency profile.

5. The Record Book

The teacher's record book is a legal document. It is the teacher's insurance that their student evaluations are defensible. The record book in this model can be adapted to any program. It is simple to set up and easy to use.

6. The Attendance Code

The attendance code is a series of symbols that indicate absences and whether they are excused or unexcused, tardiness, and entry and drop dates. With an attendance code, you can record the circumstances of absences neatly and accurately.

Conclusion

It is becoming more critical for programs to develop an accurate record of student progress and achievement. A grading pattern adapted to the teacher's program and combined with the competency profile will provide such a record and will be the student's permanent reference.

Teachers have reacted positively to the grading pattern. They like to talk about grading because it is a common concern and often a problem. A pattern based on this model, with clearly defined criteria, fairly administered, will satisfy the requirements of the law and provide teachers, students, parents, and administrators with a concrete, workable system on which to base evaluation and discussion.

Student Supplement 3

Example of a Grading Pattern

1. Course objective: To provide the student with necessary knowledge, skills, and attitudes to be successfully employed. Grades will be earned as wages earned on a regular job. Student will receive no grade when absent from class. Only by doing make-up work can student make up for lost grades. Attendance is a must.

2. Grading symbols:
   A = 91 - 100
   B = 81 - 90
   C = 71 - 80
   D = 60 - 70
   F = < 59

3. Categories to be included:

   a. Daily grade - 5 points per day based on the following criteria:

	1	2	3	4	5
WORK HABITS	Ignores directions	Follows some directions, works inefficiently	Follows directions and works satisfactorily	Steady, conscientious worker	Very accurate, resourceful and efficient
SAFETY HABITS	Sloppy and hazardous to self and others	Fair, needs improvement	Generally works safely	Meets required safety standards	Neat, conscientious, and careful
WORK AREA NEATNESS	Very sloppy, inconsiderate	Forgetful and unconscientious	Adequate	Thorough	Pride in overall appearance
WORK AREA ATTENDANCE	Often not in work area	Makes excuses to leave	Generally in work area	Seldom leaves work area	Always where assigned
RESPONSIBILITY	Unreliable	Sometimes reliable	Usually reliable	Conscientious	Very reliable

Example: If a student received a 5 for work habits, a 5 for safety habits, a 3 for work area neatness, a 3 for work area attendance, and a 4 for responsibility their daily grade would be a 4 (5 + 5 + 3 + 3 + 4 = 20/5 = 4).

Average daily grades for the nine weeks will be calculated by dividing points received by total points possible.

Example: Total points received = 160, total points possible = 200, average daily grade = 80 (160/200 = 80).

Note: Daily grades will account for 5 percent of the total nine weeks grade.

Student Supplement 3

b. Performance grade — based on the following criteria:

- Quality and amount of work accomplished within a given time
- Accomplishment of work based on stated criteria
- Completion of assignment sheets and job sheets

Note: Performance grades will account for 50 percent of the total nine weeks grade. Assume student has a 95 point average for this example.

c. Written tests — based on the following criteria:

- 10 point quizzes based on homework or class assignments

  Note: Quizzes will account for 25 percent of total test grade.

- 100 point unit tests

  Note: The average unit test score will account for 50 percent of total test grade.

- 100 point nine weeks test

  Note: Nine weeks test will account for 25 percent of total test grade.

Example: If a student made the following test scores:

10 point quizzes (10 + 10 + 10 + 10 + 8 + 10 + 9 + 8 + 10 + 10) = 95 points
100 point unit tests (90 + 85 + 95) = 270/3 = 90 points
100 point nine weeks test = 90 points

The total written test score would be:

Quizzes 95 × .25 =	23.75
Unit tests 90 × .50 =	45
Nine weeks test 90 × .25 =	22.5
	91.25 or 91

Note: The total written test score will account for 35 percent of the total nine weeks grade.

Student Supplement 3

d. Attendance grade — one grade for the nine weeks period based on the following table

Each nine weeks' period consists of approximately 45 days. The attendance grade corresponds with the number of days the student attended the program in a given nine weeks' period.

NUMBER OF DAYS ATTENDED BY 9 WEEKS				ATTENDANCE GRADE	NUMBER OF DAYS ABSENT
1st	2nd	3rd	4th		
40	41	44	50	100	0
39	40	43	49	98	1
38	39	42	48	96	2
37	38	41	47	90	3
36	37	40	46	80	4
35	36	39	45	70	5
34	35	38	44	60	6
33	34	37	43	56	7
32	33	36	42	52	8
31	32	35	41	48	9
30	31	34	40	44	10
29	30	33	39	40	11
28	29	32	38	36	12
27	28	31	37	32	13
26	27	30	36	28	14
25	26	29	35	24	15
24	25	28	34	20	16
23	24	27	33	16	17
22	23	26	32	12	18
21	22	25	31	8	19
20	21	24	30	4	20
—	20	23	29	0	—
Less than 20				0	

(Adapted from Gordon Cooper Vo-Tech Handbook)

Note: The attendance grade will account for 5 percent of the total nine weeks grade.

Student Supplement 3

e. Participation in vocational student organization — 100 points based on the following criteria:

	4	8	12	16	20
INITIATIVE	Requires constant pressure	Needs occasional prodding	Does assigned work	Occasionally seeks extra work	Seeks and recognizes work to be done
EFFORT	Quitter	Applies minimal effort	Shows satisfactory effort	Shows growing determination	Determined, persevering, and diligent
PEER RELATIONS	Uncooperative	Sometimes hard to work with	Generally cooperative	Works very well with others	Outgoing, warm, and cooperative
LEADERSHIP	Does not lead	Follows well	Shows leadership when requested	Voluntarily displays leadership	Consistent leader
MEETING ATTENDANCE	Missed four meetings	Missed three meetings	Missed two meetings	Missed one meeting	Attended all meetings

Example: Student receives a 12 for initiative, a 16 for effort, a 20 for peer relations, a 20 for leadership, and a 16 for meeting attendance their participation in VSO grade would be 84 (12 + 16 + 20 + 20 + 16).

Note: Participation in VSO grade will account for 5 percent of total nine weeks grade.

Student Supplement 3

4. Determination of nine weeks and semester grade

a. The nine weeks grade will be determined as follows:

	% of Total Grade
Daily grades	5%
Performance grades	50%
Written tests	35%
Attendance	5%
Participation in VSO	5%
	100%

Example: Student's grade

Daily grade	80	× .05	=	4.00
Performance grade	95	× .50	=	42.50
Written tests	91	× .35	=	31.85
Attendance	80	× .05	=	4.00
Participation in VSO	84	× .05	=	4.20
		1.00		86.75 = 87 (B)

b. The semester grade will be determined as follows:

	% of Total Grade
First nine weeks grade	45%
Second nine weeks grade	45%
Semester test	10%
	100%

Example: Student's grade

First nine weeks	87	× .45	=	39.15
Second nine weeks	92	× .45	=	41.40
Semester test	80	× .10	=	8.00
		1.00		88.55 = 89 (B)

Student Supplement 3

Record Book

5. Attendance code

SAMPLE ATTENDANCE CODE

○	Absent
⊗	Absent — School Activity
⊖	Absent — Extenuating Circumstances
Ⓣ	Tardy
E_1	Entry, First Day
X—	Dropped, Last Day in Class
⊜	Mistake

Enter ○ in your record book; add symbols as information is available.

Student Supplement 3

6. Record book format

Sample Record Book 1

PERIOD BEGINNING August 19, 1988

SUBJECT Auto Body Repair

PERIOD ENDING October 14, 1988

		1st Week					2nd Week					3rd Week					4th Week					5th Week				
	CLASS A.M.			19	20	21	24	25	26	27	28	31	1	2	3	4		8	9	10	11	14	15	16	17	18
	TIME 8:25-11:25.	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F	M	T	W	T	F
1	DOE, JANE				⊗							⊖														
2	DAILY GRADE			10	[illegible]	10	9	10	8	10	10	0	7	10	9											
3	LAB GRADE					95				98				100												
4	TEST										98															
5	DOE, JOHN			—		E			Ⓣ																	
6	DAILY GRADE					10	9	9	7	9	10	10	9	10	10											
7	LAB GRADE						82			98																
8	TEST										95															
9	DOE, SAM			0			0	0		0	0	0	0	✗ ⟶				DROPPED 9-2-88								
10	DAILY GRADE			0	8	7	0	0	9	0	0	0	0													
11	LAB GRADE					55																				
12	TEST																									
13																										
14																										
15																										
16																										
17																	LABOR DAY									
18																										
19																										
20																										
21																										
22	STUDENT NAME (ATTENDANCE)																									
23	(DAILY GRADE)																									
24	(TECHNICAL SKILL) > LAB GRADE																									
25	(WRITTEN WORK)																									
26	(TEST)																									
27																										
28																										
29	ATTENDANCE CODE																									
30	○ ABSENT																									
31	⊗ ABSENT-SCHOOL ACTIVITY																									
32	Ⓣ TARDY																									
33	⊖ EXTENUATING CIRCUMSTANCES																									
34	E, ENTRY (FIRST DAY)																									
35	[illegible] MISTAKE																									
36	✗—DROPPED (DATE)																									
37																										
38				YOU MAY WISH TO USE COLOR																						
39																										
40																										
41																										
42																										
43																										
44																										
45																										

Managing Competency-Based Education

Student Supplement 4—Example of Learning Contract

Business Communications Learning Contract

This contract is entered into by Danny Jay, learner at McLoud High School, and Jim Steward, teacher of Business Communications at McLoud High School. This contract is good for the 9-week period beginning September 1, 19______, and ending November 3, 19______.

I, Danny Jay, am contracting for a grade of A, based on my mastering the objectives in Option 1 during the 9-week period and my receiving an acceptable rating on my work habits.

Option 1: Requirements for an A

Completion of Assignment Sheets 1 through 4, Unit 1
Minimum score of 90 percent on written test, Unit 1
Completion of Assignment Sheets 1 through 5, Unit 2
Completion of Job Sheets 1 through 3, Unit 2
Minimum score of 90 percent on written test, Unit 2

Option 2: Requirement for a B

Completion of Assignment Sheets 1 through 4, Unit 1
Minimum score of 80 percent on written test, Unit 1
Completion of Assignment Sheets 1 through 5, Unit 2
Completion of Job Sheets 1 through 3, Unit 2
Minimum score of 80 percent on written test, Unit 2

Option 3: Requirements for a C

Completion of Assignment Sheets 1 through 4, Unit 1
Minimum score of 70 percent on written test, Unit 1
Completion of Assignment Sheets 1 through 5, Unit 2
Completion of Job Sheets 1 through 3, Unit 2
Minimum score of 70 percent on written test, Unit 2

It is understood that 10 percent of my final letter grade will be based on my receiving an acceptable rating on my work habits. This 10 percent may reduce my final grade by one letter if I receive an unacceptable on my work habits as evaluated by my teacher.

If however, I receive an acceptable rating on my work habits, I will receive the letter grade based on the number of objectives completed, as shown above.

Signed: ______________________________ Date: ________________________
(Student)

Signed: ______________________________ Date: ________________________
(Teacher)

Managing Competency-Based Education

Assignment Sheet 1—Develop a Plan to Implement Competency-Based Instructional Materials Into an Existing Program

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Systematic approach was used in developing plan	______
Plan supports competency-based principles	______
Plan can be implemented	______

A. Curriculum is a total educational process that involves the relationship of staffing, budget, facilities, students, extracurricular activities, and instructional materials. Using the information presented in the unit of instruction and your personal experiences, answer the following questions:

1. How does the student move through the system?
2. Is there a standardized format for learning materials?
3. What type of media equipment will be available?
4. What methods of instruction will be used?
5. What is the role of the administrator?
6. What is the role of the teacher?
7. What is the role of the student?
8. What is the role of support services?
9. How will the student be evaluated?
10. How will records be kept?
11. What will the grading system be?
12. How will the system be evaluated?

Assignment Sheet 1

B. Using the information provided in the unit of instruction and the curriculum planning charts, (1) develop a plan for teaching units of instruction within an instructional materials publication for your course or program; or (2) develop a plan for sequencing learning activity packets (LAPs) or modules for a student enrolled in your course or program.

Note: Consideration to consider when sequencing instructional materials should include:

- Student's interests, abilities, and learning style
- Facility design
- Availability of instructional materials, tools, equipment, and consumable supplies
- Mode of instruction: Group instruction, individualized instruction, self-paced instruction, personalized instruction, modular or station system
- Kinds of instructional materials: units of instruction, LAPs

Example:

(1)

1st week	2nd week	3rd week		9th week
Unit 1 — Planning for Competency-Based Education	Unit 2 — Aligning Curriculum and Instructional Materials	Unit 3 — Managing Competency-Based Education		• Review units of Instruction • Nine weeks test

Note: This example assumed that a group of students would move together through the course of study. Methods to individualize instruction would occur within the group instruction.

Assignment Sheet 1

(2)

Student: Jerry Bloome
Course: Word Perfect 5.1

1st week	2nd week	3rd week		9th week	Optional LAPs
LAP 1 — Getting Started LAP 2 — Function Keys LAP 3 — Keys	LAP 4 — Margins LAP 5 — Hyphenation LAP 6 — Move/Block	LAP 7 — Headers/ Footers LAP 8 — Widows/ Orphans LAP 9 — Spell Check		LAP 25 — Desktop Publishing Review Final Evaluation	LAP 26 — Graphics LAP 27 — Prepare Documents

Note: In this example the student should complete 25 LAPs in the nine-week period. Optional LAPs are provided for students who complete early. This plan will vary depending on the constraints, i.e., time, facilities, equipment, etc.

Period ____________________
1st - 7th

# of Students ________________

Yearly Curriculum Planning Chart

(1 PERIOD FOR 36 WEEKS)

Page ____ of ____

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
1st 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
2nd 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
3rd 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
4th 9 weeks __________									

SCHOOL ____________________ INSTRUCTOR ____________________ DATE __________

Assignment Sheet 1

Student ____________________

Course ____________________

CURRICULUM PLANNING CHART
(1PERIOD FOR 36 WEEKS)

Page ____ of ____

OPTIONAL LAPS

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
1st 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
2nd 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
3rd 9 weeks __________									

	1st week	2nd week	3rd week	4th week	5th week	6th week	7th week	8th week	9th week
4th 9 weeks __________									

SCHOOL ____________________ INSTRUCTOR ____________________ DATE __________

Assignment Sheet 1

Assignment Sheet 1

C. Determine budget needs to teach the units of instruction or LAPs sequenced in part B. Needs should not only be based on quantity and dollars, but also on the period of time needed. Items to be considered should include:

1. Instructional materials needs
    - a. Teacher materials
    - b. Student materials
    - c. Audiovisual
    - d. References
    - e. Other materials
    - f. Time materials are needed

      Examples: All year, first nine weeks, second week, September
2. Tool, equipment, and supplies needs
    - a. Description of item (be specific)
    - b. Quantity
    - c. Cost
    - d. Possible vendor
    - e. Availability

      Examples: Needs to be purchased, needs to be built
    - f. Time tools, equipment, and consumable supplies are needed

      Examples: All year, first nine weeks, second week, June

Managing Competency-Based Education

Assignment Sheet 2—Develop a Plan for an Appropriate Filing System

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Accounted for all major groups and subgroups appropriate to materials	______
Identified major groups as headings for file guides	______
Based on one or more of the basic filing methods	______
Listed brief descriptive words for labeling file guides and folders	______
Included a description of the appropriate and convenient storage facilities and equipment needed	______
Described a system which is logical and easy to understand	______

Filing is the systematic arrangement of records and materials so that they may be quickly found. Everyone has a filing system of one kind or another. For some, it may be a box, a drawer, or even a "pile-it" system. For others, the system may include a computer or rooms with several filing cabinets.

Every teacher needs a good filing system since it may be necessary to keep certain papers and materials for future reference. The better the system the greater your efficiency in handling instructional materials and in managing and maintaining program and student records.

You need to be able to manage program and student records in a businesslike manner. The records you have filed contain important data which should be readily available when school officials require such data.

Prompt retrieval is the end result of a workable filing system. If you have a specific place to store and preserve your instructional materials, and take the time to replace each item after use, you will be able to quickly find an item whenever it is needed.

Your filing system should be personally designed to meet your specific needs. You may wish to adopt or adapt a system someone else has developed, or to select certain features from the basic filing system to develop your own system.

Once developed, the filing system requires continued care. Updating, reorganizing, adding, and discarding materials are all included as part of the maintenance of a filing system.

Assignment Sheet 2

In the final analysis, a filing system is what you make it. The filing system should reduce clutter and help make the classroom and laboratory an orderly and attractive environment which is conducive to learning. It should provide for the safe storage and prompt retrieval of your instructional materials and management records.

Directions: Given materials or records you have accumulated, develop a plan for an appropriate filing system. Use the following steps as a guide in developing your plan.

1. Identify materials which you have accumulated and wish to file.

   Examples: Records, reports, student files, instructional materials

2. Review your materials to determine the number of groups and subgroups required for your filing system.

   Examples: Correspondence, policies, reports, student organization, meetings

3. Arrange your materials according to the alphabetical and/or numerical filing method.

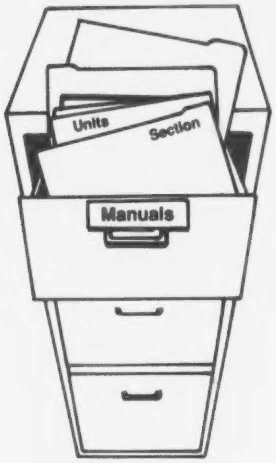
   Note: See examples for filing systems for office files and instructional materials.

4. Label your file guides and subgroups according to the method you select.

5. Obtain an office supply catalog in which you can review the available equipment and supplies and determine those that best fit your needs.

   Examples: File cabinets, expandable folders, pocket folders

STORAGE OF MATERIAL



Assignment Sheet 2

Example: Filing System for Office Files

0.00 FILING INDEX

1.00 CORRESPONDENCE

1.05 STATE DEPARTMENT LETTERS
1.10 INCOMING LETTERS
1.15 OUTGOING LETTERS
1.20 INTERDEPARTEMENTAL MEMOS
1.25 NEWSLETTERS

2.00 POLICIES AND PROCEDURES

2.05 SCHOOL/BOARD POLICIES
2.10 STUDENT HANDBOOK
2.15 STATE DEPARTMENT POLICIES AND PROCEDURES
2.20 PERSONNEL DIRECTORY (LOCAL)
2.25 PERSONNEL DIRECTORY (STATE DEPARTMENT)
2.30 INDUSTRIAL DIRECTORY (STUDENT JOB POSSIBILITIES)
2.35 ADVISORY COMMITTEE
2.40 ADVISORY COMMITTEE MEETING MINUTES
2.45 LONG-RANGE TEACHING PLAN
2.50 COURSE OUTLINE AND COURSE OBJECTIVES

3.00 REPORTS

3.05 STATE DEPARTMENT
3.10 LOCAL ADMINISTRATIVE
3.15 ITINERARIES (FIELD VISITS)
3.20 INDUSTRY VISITS
3.25 ENROLLMENT (STUDENT)
3.30 FOLLOW-UP (STUDENT)
3.35 EVALUATION (STUDNET)
3.40 EVALUATION (PROGRAM)
3.45 PLACEMENT
3.50 ACCIDENT
3.55 WORK PERMIT
3.60 SIGNED O.J.T. AGREEMENT
3.65 O.J.T. JOB SUPERVISORY EVALUATION
3.70 COUNSELING REPORTS

4.00 VSO INFORMATION

4.05 VSO CORRESPONDENCE
4.10 MEMBERSHIP ROSTER
4.15 ADVISOR'S GUIDE
4.20 U.S. SKILL OLYMPICS REGULATIONS
4.25 DISTRICT/STATE OFFICERS
4.30 CLUB ACTIVITY CALENDAR
4.35 PUBLICITY (REPORTER)
4.40 SECRETARY NOTEBOOK
4.45 TREASURER NOTEBOOK
4.50 SUPPLY CATALOG
4.55 OFFICER'S LEADERSHP CONFERENCE
4.60 DISTRICT/STATE CONFERENCE
4.65 NATIONAL CONFERENCE
4.70 NATIONAL VOCATIONAL EDUCATION WEEK
4.75 SKILL CONTEST INFORMATION
4.80 LEADERSHIP CONTEST INFORMATION
4.85 FUND-RAISING PROJECTS

5.00 MEETINGS

5.05 STAFF/FACULTY
5.10 P.I. MEETINGS AND WORKSHOPS
5.15 CIVIC ORGANIZATIONS
5.20 AUGUST CONFERENCE
5.25 MID-WINTER CONFERENCE

6.00 CURRICULUM AND IN-SERVICE

6.05 IN-SERVICE/PRE-SERVICE TRAINING
6.10 CURRICULUM CENTER INFORMATION
6.15 CURRICULUM CATALOG AND ORDER FORMS
6.20 FILM CATALOG
6.25 RESOURCE CATALOG (LIBRARY)

7.00 SHOP ORGANIZATION AND MANAGEMENT

7.05 CERTIFICATION/TRANSCRIPT
7.10 FORMS (BLANK)
7.15 ESTIMATES (SHOP PROJECTS)
7.20 WORK ORDERS (SHOP PROJECTS COMPLETED)
7.25 INVOICES
7.30 CONTRACTS (LIVE SHOP PROJECTS)
7.35 INVENTORY (CONSUMABLE SUPPLIES)
7.40 INVENTORY (TOOLS-EQUIPMENT)
7.45 INVENTORY (STATE-OWNED EQUIPMENT)
7.50 EQUIPMENT MAINTENANCE/REPAIRS
7.55 WANT/NEED LIST
7.60 SHOP LAYOUT/SHOP PLANS
7.65 SUBSTITUTE TEACHER LESSON PLANS
7.70 WEEKLY LESSON PLANS

8.00 MISCELLANEOUS

8.05 RESUME
8.15 SALARY SCHEDULE
8.20 INSURANCE

9.00 STUDNET FOLDEPS (COMPETENCY PROFILES)

Assignment Sheet 2

Example: Filing System for Instructional Materials

Publication: Exploring Aeronautics and Space Technology (MAVCC)

0.00 Filing Index

1.00 Teacher Units
1.01 Introductory Materials
1.10 Unit I — Introduction to the Careers in the Aviation and Space Industry
1.11 Unit I — Supplemental Materials
1.20 Unit II — Satellite Communication Systems
1.21 Unit II — Supplemental Materials
1.30 Unit III — Composite Materials in Airframe Manufacturing
1.31 Unit III — Supplemental Materials
1.40 Unit IV — Space Station Construction Techniques
1.41 Unit IV — Supplemental Materials
1.50 Unit V — Space-Shuttle Propulsion Systems
1.51 Unit V — Supplemental Materials
1.60 Unit VI — Aerostatics and Aerodynamics
1.61 Unit VI — Supplemental Materials

2.00 Student Materials

2.10 Unit I — Introduction to the Careers in the Aviation and Space Industry
2.11 Unit I — Test
2.12 Unit I — LAP
2.20 Unit II — Satellite Communication System
2.21 Unit II — Test
2.22 Unit II — LAP
2.30 Unit III — Composite Materials in Airframe Manufacturing
2.31 Unit III — Test
2.32 Unit III — LAP
2.40 Unit IV — Space-Station Construction Techniques
2.41 Unit IV — Test
2.42 Unit IV — LAP
2.50 Unit V — Space-Shuttle Propulsion Systems
2.51 Unit V — Test
2.52 Unit V — LAP
2.60 Unit VI — Aerostatics and Aerodynamics
2.61 Unit VI — Test
2.62 Unit VI — LAP

Equipment and materials needed:

4-drawer file cabinet
25 expandable folders
12 "Duotane" pocket folders

Managing Competency-Based Education

Assignment Sheet 3—Develop a Progress Chart

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Tasks are listed across the top	_____
Students names are listed	_____
Coding system has been developed	_____
Followed directions	_____

A progress chart is a planning tool to assist teachers and students track their progress toward successful completion of a course or program.

Note: A progress chart may be used for one student or groups of students.

Directions: Following the steps listed, develop a progress chart for option A (given situation) or option B (your program or course).

Steps for developing a progress chart

1. Review instructional materials.
2. Identify what every student has to do (tasks) to complete the program.
3. List the tasks to be completed across the top.

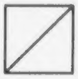
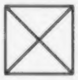
   Examples: Assignment sheets, job sheets, tests, special projects
4. List student names in the vertical column.

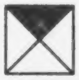
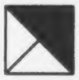
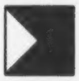
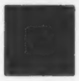
Assignment Sheet 3

5. Develop a code indicating degree of completion.

   Note: No grades may be posted on a progress chart—only checks or a code indicating degree of completion.

   Example: Progress Chart Clarification Codes

   1. Teacher-Demonstrated TASK. 
   2. Student-Returned Demonstration of TASK. 
   3. Student Degree of TASK Mastery.

Competency Mastery Level:		
1.		Unskilled
2.		Limited Skill
3.		Moderately Skilled
4.		Skilled

6. Post progress chart where students can see it.

Option A

Information :

1. **Personnel Security** instructional analysis (see Student Supplement 1)
2. Students names:

   Aulgur, Joanne
   Brannon, Robert
   Buck, Sue
   Fulkerson, Dan
   Hauf, Anita
   Huston, Jane
   Kellum, Mary
   Kruse, Tim
   Short, Dee
   Steward, Jim

Directions: Using the information provided, complete a progress chart and develop a code indicating degree of completion.

Assignment Sheet 3

Option B

Directions: Complete a progress chart for your program or course and develop a code indicating degree of completion.

Progress Chart

Trade ____________________

Date ____________________

What The Trainee Should Be Able To Do

Names	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
1																																													
2																																													
3																																													
4																																													
5																																													
6																																													
7																																													
8																																													
9																																													
10																																													
11																																													
12																																													
13																																													
14																																													
15																																													
16																																													
17																																													
18																																													
19																																													
20																																													
21																																													
22																																													
23																																													
24																																													

What The Trainee Should Know

Assignment Sheet 3

Managing Competency-Based Education

Assignment Sheet 4—Write a Plan For Using a Competency Profile in a Program

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
When the student will receive the profile is stated	_____
Rating scale is defined	_____
When the student will be rated on each competency is stated	_____
The flow of the profile from teacher to student to parents to school files to employer is outlined	_____
Policy and procedure governing when and to whom the profile will go to is stated	_____

A competency profile is a record-keeping form to keep track of a student's competencies in a specific program or class. (See example.) There are many names for a competency profile. Among these are: student outcome record, skill record, performance record, employability profile, proficiency evaluation form, and training achievement record. No matter what term is used, they all have basically the same information and serve the same purpose.

Directions: Using the space provided, write the procedure or plan you would follow for using competency profiles in your class. Your plan will be evaluated using the evaluation criteria.

Questions to be considered include:

1. When should you begin completing the student's profile?
2. What is your rating scale?
3. Have clear and established criteria been established for the rating scale?
4. Have units of instruction and list of minimum competencies been identified?
5. When will you rate the student on each competency?
6. Who may see the profile?
7. What are your school's policies and procedures regarding competency profiles?

Assignment Sheet 4

Food Production, Management, and Services: Introduction

Competency Profile

Name: ______________________________

Directions: Evaluate the student using the rating scale below. Write the appropriate number to indicate the degree of competency achieved. The descriptions associated with each of the numbers focused on a level of student performance for each of the tasks listed. The written test scoreline is provided for optional teacher use. It may not be applicable in all cases.

Option A

Rating scale:
4 - Skilled - Can perform job with no additional training.
3 - Moderately Skilled - Has performed job during training program; limited additional training may be required.
2 - Limited Skill - Has performed job during training program; additional training is required to develop skill.
1 - Unskilled - Is familiar with process, but is unable to perform job.
0 - No Exposure - No information or practice provided during training program, complete training required.
NA - Non-applicable.

Option B

Yes - Can perform with no additional training
No - Is unable to perform satisfactorily

Unit 1: Orientation

______1. Compare food service operations in the community.
______2. Interview a food service employee.
______3. ______________________________

______Written Test Score

Assignment Sheet 4

Unit 2: Applying for a Job

______1. Write a resumé
______2. Write a letter of application for a food service job.
______3. Complete an employment application form for a job in the food service industry.
______4. Write a follow-up letter or make a follow-up phone call after interviewing for a food service job.
______5. ______________________________

______Written Test Score

Unit 3: Human Relations

______1. Answer questions concerning human relations with fellow workers.
______2. Apply human relations skills in work-related situations.
______3. Determine how behavior affects job performance
______4. ______________________________

______Written Test Score

Unit 4: Communication

______1. Prepare an oral presentation.
______2. Make an oral presentation.
______3. ______________________________

______Written Test Score

Unit 5: Sanitation

______1. Solve problems concerning food-borne illnesses.
______2. Record observations of food handling and storage.
______3. Observe and record sanitation practices.
______4. Wash hands.
______5. Wet mop a floor.
______6. Wash pots and pans.
______7. ______________________________

______Written Test Score

Assignment Sheet 4

Unit 6: Safety

______1. Complete a safety checklist.
______2. Apply knowledge of safety procedures.
______3. Lift and carry a heavy object.
______4. ____________________

______Written Test Score

Unit 7: Nutrition

______1. Describe functions of dietary nutrients.
______2. Plan breakfast, lunch, and dinner menus.
______3. Plan fast food breakfast, lunch, and dinner menus.
______4. ____________________

______Written Test Score

Comments: ____________________

Evaluator: ____________________ Date: ____________________

*** Permission to duplicate this profile is granted.**

Managing Competency-Based Education

Assignment Sheet 5—Apply Techniques in Establishing a Grading Pattern

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Answers covered major points	______
Used complete sentences	______
Followed directions	______

Directions: Read the following case study concerning grading patterns, then answer the questions which follow. Please answer in complete sentences.

Sue Hauf was sitting in her office reviewing her lesson plan when Jim Brannon dropped by to discuss his exam grade with her.

"Ms. Hauf, I got a C− on the last exam, and I was wondering if there's still a chance for me to get a B in word processing."

Sue took out her grade book and looked at Jim's grades. "Looks like you're having trouble with exams, Jim."

"Well, Ms. Hauf, I've been so busy with my job at Computer Center that I haven't studied as much as I should. I got a C− on the first exam, and was hoping to do better on this one, but I got a C− on it, too."

Sue did some math on a note pad. Then she showed Jim the following grading system:

	Weight	Weighted Points
Exams (3 @ 100 points) = 300	.50	150
Lab Assignments (5 @ 20 points) = 100	.50	50
	Total	200

Grade symbols	
	A 180-200
	B 160-179
	C 140-159
	D 120-139

Jim's grades:		
	Exam #1 = 70	Lab Assignments:
	Exam #2 = 72	5 @ 20 points each

Assignment Sheet 5

"Your exams only count half of your grade. Right now you have a 71 average on them. You have 20's on all 5 lab assignments. Even if you get a C on the last exam, Jim, you'll still get a B in the course, because you have an A in half of it to balance the C in the other half."

Jim breathed a sigh of relief. "I wasn't sure what your grading system was. At least I'll get a B. It's real important to me because I'm hoping to work full-time this summer, and Mr. Boyd said he would like to see my grade from this class."

"That won't be a problem, Jim. Just go down to the school office after the term ends and they'll make you a copy of your grade report. You might even be lucky and get an A in the course," Ms. Hauf said.

"Gee thanks, Ms. Hauf. Thanks a lot!"

Ms. Hauf went back to her lesson plans.

1. How well did Ms. Hauf perform in establishing a grading pattern for her course?

2. What do you think of her method of determining student grades?

3. What suggestions would you offer for improvement?

Managing Competency-Based Education

Assignment Sheet 6—Develop a Grading Pattern

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Criteria on which students will be graded are stated	______
Values are assigned to test grades	______
Values are assigned to categories of grading pattern	______
Symbols have been determined for use in recording daily grades	______
Attendance code has been designed	______

The purpose of this assignment sheet is to select the criteria on which students will be graded; assign values to test grades and to categories of the grading pattern; determine the symbols to use to record daily grades; and design attendance code.

Suggestions to consider when developing a grading pattern include:

1. Grading symbols are determined by the school and should be the same for all participants.

2. The number of categories should be manageable. There should be no more than seven and no fewer than three.

3. The elements should make logical sense for the program or occupational area.

4. Job conditioning skills listed in the daily grade are observable and reasonable.

   Examples: Dress code, safety

5. Percentages, fractions, or total point values should total 100%.

6. Weight distribution of grading pattern is fair and equitable.

7. Daily grade can be translated to values equivalent to other elements.

8. Attendance symbols are sufficiently different and can be easily discriminated.

   Note: Attendance grade must be in line with school policy.

Assignment Sheet 6

9. Before implementation, grading pattern should be checked and approved by an administrator.

Directions: Using the information in Student Supplement 2—The Grading Pattern, and Student Supplement 3—A Grading Pattern Model, include the following information as you develop a grading pattern for your program.

1. Write your course objective for your grading pattern.

2. Determine grading symbols (school-wide code)

A =
B =
C =
D =
F =

3. List the categories to be included in the grading pattern for your program.

4. List the job conditioning skills, work ethic, attitudes, and behaviors that are important to your program and that you will include in the daily grade.

5. Assign percentage or fractional values to the elements of your grading pattern.

Note: Be sure the total equals 100% for percentages or 1 for fractions.

6. a. State the values you assigned to the performance grade.

Technical skills ______% Written skills ______%

b. State the test categories values you assigned each test.

7. Determine the method you will use to calculate the daily grade.

Examples: 1 to 10; 1 to 5; letter grade

Assignment Sheet 6

8. Assign an attendance code. Write the symbol in front of the word.

Absent — Unexcused
Absent — School activity
Absent — Extenuating circumstances
Tardy
Entry (first day)
Dropped
Mistake
____

____

____

9. a. Divide the record book into sections, one section per class level.

b. Design a record-book format for your program.

Note: Review your grading pattern to determine the number of lines needed for each student.

c. Write the code system in front of the record book.

Managing Competency-Based Education

Assignment Sheet 7—Complete a Student Performance Contract

Name ______________________ Overall Rating __________

Evaluation criteria	**Rating**
Student data is complete	______
Number of hours available for instruction is determined	______
Tasks student will contract to do are identified	______
Expected completion dates have been stated	______
Contract is signed and dated by instructor and student	______

Student performance contracts may vary from very simple ones which track all students through a required curriculum to those which track students working on multiple goals. The type of contract you develop will depend on the method you choose to deliver instruction. If all students are expected to complete all tasks in a course or program, a very simple contract may be used. If students have a choice based on their interest, needs, and learning styles, then a more complex contract will be needed.

Directions: Complete the student performance contract on the following page using the information given.

John Doe, a senior from Washington High School, is enrolled in the third semester of a Graphic Arts program. This semester John's emphasis is on desktop publishing. On September 8, two weeks after the beginning of the first nine weeks, John and his teacher worked out their contract for the first quarter.

Checking the secondary student attendance days calendar, the teacher determined that Washington High School had 44 attendance days in the first nine weeks. he also noted that ten days had already been used leaving 34 days. John's class begins at 11 a.m. and ends at 11:55 a.m. each day.

John and his teacher agreed that John would master the following tasks. They also agreed upon a expected completion date for each task.

1. Proofread a document — September 14
2. Determine specifications for a newsletter — September 21
3. Determine specifications for a multi-page document — September 28

Assignment Sheet 7

4. Stack graphics and test — October 2
5. Produce a newsletter — October 9
6. Produce a multi-page document — October 23

Student Performance Contract

Student Name John Doe ID Number 111-11-111
Program Desktop Publishing
Duty Produce a newsletter and multipage document
Starting Date September 8 Expected Completion Date October 14

	Task	Expected Completion Date	Actual Completion Date	Instructor Initials
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				

Plan cooperatively developed by and agreed to by:

Student Signature Date Teacher Signature Date

Note: This plan may be renegotiated upon request by the student or teacher when deemed necessary and mutually agreed upon by both parties.

Managing Competency-Based Education

Assignment Sheet 8—Complete a Learning Contract for a Grade

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Followed directions	______
Names of parties entering contract were stated	______
Period of time for meeting requirements was stated	______
Objectives or criteria for each grade option were stated	______
Other requirements were stated	______
Contract is signed and dated	______

A basic theory of competency-based education is that, given sufficient time and the appropriate instructional materials, most if not all students can achieve mastery of a subject. Under these ideal conditions, assigning grades to students enrolled in a course or program would not be necessary because all students would receive the same passing grade by demonstrating mastery of every objective required in the program. Unfortunately, the real world does not conform to the ideal. Teachers have to assign grades for a variety of reasons. Colleges and universities want to know the grade point average of every applicant. Prospective employers often use grades as a basis for comparing one applicant with another. Parents usually want to know where their child stands in relation to the rest of the class. As a result, teachers are faced with the dilemma of having to assign grades when, in principle, instruction is being designed and delivered in a way that should allow all students to succeed.

There is no easy solution to the grading problem. Since school requirements vary, each teacher has to find a method that will be realistic in their situation.

A learning contract for a grade allows the student and teacher to make an agreement specifying how much work must be accomplished within a given period of time to receive an A, B, or C. Quality requirements should be set so that the student contracting for an A is not just doing more of the same work required of the student contracting for a B. The learning contract should include:

- Names of the parties entering the contract;
- Objectives (knowledge, attitude, performance), learning activities, and other requirements;

Assignment Sheet 8

- Standards for successful completion of each requirement;
- Period of time allowed for meeting the requirements of the contract
- Grading requirements

Example: See Student Supplement 4

Directions: Using the following information, complete a learning contract for a grade.

Information:

1. Names of parties entering the contract —
    - Student - Jane Darrow
    - Teacher - Jim Spruge
2. Objectives—Jane plans to become employed during the current school year but needs additional instruction on job and personal safety. Jim plans to use the instructional materials as outlined in Student Supplement 1—**Personnel Security** to meet Jane's requirements.
3. Standards for successful completion—To successfully complete the requirements, the student must complete all psychomotor skills objectives and score a minimum of 85 percent on the written test for each unit of instruction.
4. Period of time for meeting the requirements—nine weeks beginning March 15, 19______ and ending May 1, 19______.
5. Grading requirements —
    - To receive an A

      Jane must receive a skilled rating on all psychomotor skills and a minimum score of 85 percent on the written test for each unit of instruction
    - To receive a B

      Jane must receive at least a moderately skilled rating on all psychomotor skills and a minimum score of 85 percent on the written test for each unit of instruction.
    - To receive a C

      Jane must receive at least a limited skill rating on all psychomotor skills and score a minimum of 85 percent on the written test for each unit of instruction

Assignment Sheet 8

- Other requirements

  Five percent of the final grade will be based on an acceptable rating on Jane's work habits. Five percent of the final grade will be based on attendance.

  Note: Work habits and attendance policy have been established as part of the course grading pattern and have been approved by the school administration and discussed with each student prior to starting the class.

- Jane plans to contract for an A.

Assignment Sheet 8

Contract for Grade

This contract is entered into by ______________________________, student at Green Technical School, and ______________________________, teacher of Technical Training at Green Technical School. This contract is good for the ________________________ period beginning __________________ and ending __________________.

I, ______________________________, am contracting for a grade of ______ based on my mastering the objectives for **Personnel Security** during the ________________________ period and my receiving an acceptable rating on my work habits and attendance.

Option 1: Requirements for an A

Option 2: Requirements for a B

Assignment Sheet 8

Option 3: Requirements for a C

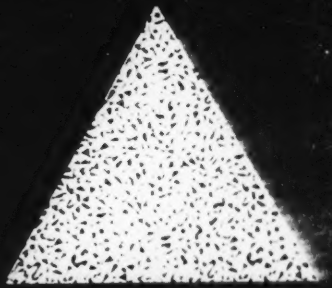
Other requirements:

Signed ______________________________ Date: ______________________________
(Student)

Signed ______________________________ Date: ______________________________
(Teacher)

Competency-Based

Writing Perfor



Writing Performance Objectives is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Writing Performance Objectives

Objective Sheet

Unit Objective

After completing this unit, the student should be able to write performance objectives. The student should demonstrate this competency by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms associated with writing performance objectives with their correct definitions.
2. State the instructional intent of a performance objective.
3. List advantages of using performance objectives.
4. State things to do before writing performance objectives.
5. Distinguish among components of a performance objective.
6. Match domains of the Taxonomy of Educational Objectives to their correct definitions.
7. State criteria for writing performance objectives.
8. Determine process for developing acceptable criteria for performance objectives.
9. State criteria for writing test items.
10. Select components of performance objectives. (Assignment Sheet 1)
11. Distinguish between performance objectives and nonperformance objectives. (Assignment Sheet 2)
12. Convert nonperformance objectives to performance objectives. (Assignment Sheet 3)
13. Write performance objectives. (Assignment Sheet 4)
14. Write test items for performance objectives. (Assignment Sheet 5)

Writing Performance Objectives

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.
2. Review Teaching Suggestions section that follows. Plan for classroom activities.
3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.
4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.
5. Make copies of any handouts that you plan to distribute to students.
6. Review instructions for evaluating student performance, and make copies of the unit evaluation form.

Delivery and Application

7. Provide students with unit of instruction.
8. Discuss unit and specific objectives.
9. Discuss the information sheet. Implement teaching plan to localize, supplement, and personalize the unit.
10. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Evaluation

11. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.
12. Make copies of written test. Add or modify test items as needed.
13. Give written test.
14. Compile assignment sheet ratings and written test score on the Unit Evaluation Form. Include any additional assignments.
15. Reteach and retest as required.

Suggested Activities

Teaching Suggestions

1. Introduce the unit by discussing the importance of writing relevant, well-written performance objectives.

2. Find cartoons which illustrate expected or unexpected learning outcomes.

3. Collect examples of performance objectives written by various sources.

4. Use Teacher Supplements 1 through 4 to provide additional information for objective 6.

5. Make a transparency of Part A and Part B in Teacher Supplement 5 and use to further explain the cognitive domain. **Part A** should be used to provide a broad overview of a problem. **Part B** could be used to illustrate the levels of the cognitive domain. First, have students write down their responses to each statement. Second, discuss the questions students asked themselves as they tried to answer the statements. Third, tie to definitions of cognitive domain and how the levels build from simple to complex. Use example below to guide class discussion.

   Example:

   - Recall key facts from the story "The Three Little Pigs."
     Questions: Who, what, when, where, how
     Level: Knowledge—Identification and recall of information

   - In your own words, tell what happened to the pigs.
     Questions: How would you tell in your own words? What is the main idea of the story?
     Level: Comprehension—Organization and selection of facts and ideas

   - What would you do if a bad person knocked on your door?
     Questions: Why is this significant? How is this related to ______? How is this an example of ______?
     Level: Application—Use of facts, rules, principles

   - How were the pigs' houses different?
     Questions: What are the parts or features of? How does this compare/contrast with other houses?
     Level: Analysis—Separation of a whole into component parts

   - What would have happened if a police officer were present?
     Questions: What would you predict/infer? What solutions would you suggest? How would you create a new ending?
     Level: Synthesis—Combination of ideas to form a new whole

Suggested Activities

- Explain why you think the pigs were good thinkers or bad thinkers.
  Questions: Do you agree? How would you decide? What criteria would you use to assess? What is the most important issue?
  Level: Evaluation—Development of opinions, judgements, or decisions

Resources Used in Developing This Unit

1. Brannon, Donald R., Gerald F. Day, and Donald Maley. *How To Write Performance Objectives.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.
2. Instructional Units developed by Instructional Services Division. Stillwater, OK: Oklahoma Department of Vocational and Technical Education, 1989.
3. Mager, R.F. and K.M. Beach. *Developing Vocational Instruction.* Belmont, CA: Fearon Publishers, 1967.
4. Mager, R.F. *Preparing Instructional Objectives.* 2nd ed. Belmont, CA: Fearon Publishers, 1975.
5. Popham, W. James and Eva L. Baker. *Systematic Instruction.* Englewood Cliffs, NJ: Prentice-Hall, Inc., 1970.

Writing Performance Objectives

Answers to Assignment Sheets

Assignment Sheet 1

1. Given a list of five objectives, the student should be able to identify the behavior, the conditions, and the standard for each objective. (100% implied)

2. Given pictures of ten parts of a car engine, the student should be able to identify all ten of them orally by name within two minutes.

3. Given a fully-equipped power hacksaw, job specifications, work piece, steel rule, file, scribe, saw vise, and floor stand, the student should be able to measure and cut off material to ± 1/16″ accuracy.

4. Given 10 pieces of metered reply mail, a postal scale, and a postage meter, the student should be able to affix the correct, current, first-class rate of postage with 100% accuracy.

5. Given the proper tools and Volvo repair manual, the student should be able to disassemble the Zenith carburetor on a Volvo 164 according to the manufacturer's specifications.

6. After completing this unit, the student should be able to define terms associated with performance objectives with eighty-five percent accuracy.

Assignment Sheet 2

1. Yes To adjust is observable. Specifications of the operator's manual are measurable.

2. No To understand is difficult to observe or measure. What is satisfactory to one instructor may not be satisfactory to another.

3. Yes To transcribe is observable. Minimum of three errors is measurable.

4. Yes To illustrate is observable. Eighty-five percent accuracy is measurable.

5. No To distinguish is observable. What is satisfactory to one instructor may not be satisfactory to another.

6. Yes To lead is observable. According to *Robert's Rules of Order* is measurable.

Answers to Assignment Sheets

Assignment Sheet 3

Note: There will be several ways to convert the nonperformance objectives to performance objectives depending on the conditions, behavior, and standards expected of the student. An example of a performance objective is provided for each statement on the assignment sheet.

1. After completing this unit, the student should be able to interpret Ohm's law as related to electricity with 85 percent accuracy.
2. After completing this unit, the student should be able to convert common fractions to decimals with 100 percent accuracy.
3. After completing this unit, the student should be able to distinguish between performance objectives and nonperformance objectives with 100% accuracy.
4. After completing this unit, the student should be able to state the chemical formula for water with 100 percent accuracy.
5. After completing this unit, the student should be able to arrange in order the steps in solving a mathematical equation with 100% accuracy.
6. After completing this unit, the student should be able to read and outline the major points of a poem within thirty minutes with 100 percent accuracy.

Assignment Sheet 4

The answers will depend on the information written. Refer to objective 7—criteria for writing objectives.

Assignment Sheet 5

Answers should tie to objectives written in Assignment Sheet 5. Refer to objective 9—criteria for writing test items.

Writing Performance Objectives

Answers to Written Test

1.

a.	5	d.	7	g.	4	j.	1
b.	3	e.	10	h.	8	k.	9
c.	2	f.	11	i.	6		

2. Answer should include:

   a. Clarify what outcomes are expected from the student.
   b. Define outcomes in terms of specific changes in student behavior.

3. Answer should include four of the following:

   a. Makes course content clear
   b. Allows for focusing resources toward measurable goals
   c. Aids in selection of instructional materials
   d. Aids teacher in objectively evaluating instruction
   e. Assists with student motivation
   f. Facilitates development
   g. Assists in student recruitment
   h. Aids in public relations
   i. Provides accountability of instruction

4. Answer should include:

   a. Locate or write a job or program description.
   b. Determine performance tasks.
   c. Determine basic academic and workplace skills.
   d. Determine the major characteristics of the target population.
   e. Select the tasks for which instruction can appropriately be provided.
   f. Determine specificity of objectives.
   g. Establish course prerequisites.

5.

a.	C	d.	B
b.	S	e.	S
c.	C	f.	C

6.

a.	2
b.	3
c.	1

Answers to Written Test

7. Answer should include four of the following:

    a. State the conditions, behavior, and standards to be expected in terms of student performance.
    b. List the subject matter which should be covered.
    c. Use only one action verb stated in precise terms.
    d. State in such a way that a test item can be developed to determine if the student has reached that objective.

8. Answer should include:

    a. Work with advisory committees.
    b. Collect job and/or program and task information.
    c. Ask questions to analyze a job and/or program.
    d. Verify the task and criteria by surveying workers.

9. Answer should include three of the following:

    a. Provide criterion-referenced evaluation.
    b. Align test items to performance objectives.
    c. State in clear, concise language.

Writing Performance Objectives

Written Test

Name ______________________________ Score ______________

1. Match the terms on the right with their correct definitions.

______a. A change in a student's behavior due to an educational experience

______b. A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

______c. A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

______d. Measure of a student's ability to perform a given procedure

______e. One who receives instruction

______f. Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

______g. Expectations of student performance upon completion of instruction

______h. Rating the product of a student's performance

______i. A statement of what the student must do in observable or measurable terms

______j. Describes situation under which task will be performed

______k. Criteria which specify exactly what constitutes successful completion of a prescribed performance

1. Condition
2. Duty
3. Evaluation
4. Learner outcome
5. Learning
6. Performance objective
7. Process evaluation
8. Product evaluation
9. Standard
10. Student
11. Task

Written Test

2. State the instructional intent of a performance objective.

____

____

3. List four advantages of using performance objectives.

   a. ____

   b. ____

   c. ____

   d. ____

4. State five things to do before writing performance objectives.

   a. ____

   b. ____

   c. ____

   d. ____

   e. ____

5. Distinguish among components of a performance objective. Place a "C" next to a statement of conditions, a "B" next to a measurable behavior, and an "S" next to standards.

   ______a. After completion of this unit . . .

   ______b. . . . with 100% accuracy.

   ______c. With the aid of a service manual . . .

   ______d. State four factors . . .

   ______e. Obtain a "pass complete" indication from diagnostic software

   ______f. Given pictures of ten trees . . .

Written Test

6. Match domains of the Taxonomy of Educational Objectives on the right with their correct definitions.

______a. Deals with the physical responses of the student and the development of manipulative skills

______b. Deals with changes in interest, attitudes, and values and the development of appreciations and adequate adjustment

______c. Deals with recall or recognition of knowledge and the development of intellectual abilities and skills

1. Cognitive
2. Psychomotor
3. Affective

7. State three criteria for writing performance objectives.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

8. Determine the process for developing criteria for performance objectives for the following situation.

A curriculum specialist has been assigned the responsibility to develop instructional materials for the occupation—robotic technician. The specialist has developed a task list, but is not sure that the criteria identified for each performance objective are acceptable. What action would you recommend to validate the criteria?

Written Test

9. State the criteria for writing test items.

   a. ______________________________

   b. ______________________________

   c. ______________________________

***Permission to duplicate this test is granted.**

Writing Performance Objectives

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Select Components of Performance Objectives Rating ______

Comments: ____

____

Assignment Sheet 2—Distinguish Between Performance Objectives and Nonperformance Objectives Rating ______

Comments: ____

____

Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives Rating ______

Comments: ____

____

Assignment Sheet 4—Write Performance Objectives Rating ______

Comments: ____

____

Assignment Sheet 5—Write Test Items for Performance Objectives Rating ______

Comments: ____

____

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ____

____

Teacher Signature ______________________________ Date __________

Student Signature ______________________________ Date __________

***Permission to duplicate this form is granted.**

Writing Performance Objectives

Learning Steps

Name ______________________________

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Study** Information Sheets, Objectives 1 through 5, pp. 3-5.

______ 3. **Do** Assignment Sheet 1—Select Components of Performance Objectives, p. 15.

______ 4. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 5. If evaluation is not satisfactory, repeat steps 2 through 4.

______ 5. **Study** Information Sheets, Objectives 6 and 7, pp. 5 and 6 and Student Supplements 1-3, pp. 9-13.

______ 6. **Do** Assignment Sheet 2—Distinguish Between Performance and Nonperformance Objectives, pp. 17 and 18, and Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives, pp. 19-21.

______ 7. **Stop** Ask teacher to evaluate completed assignment sheets. If evaluation is satisfactory, continue to step 8. If evaluation is not satisfactory, repeat steps 5 and 6.

______ 8. **Study** Information Sheet, Objective 8, p. 6.

______ 9. **Do** Assignment Sheet 4—Write Performance Objectives, pp. 23 and 24.

______10. **Stop** Ask teacher to evaluate completed assignment sheet. If satisfactory, continue to step 11. If not satisfactory, repeat steps 8 and 9.

______11. **Study** Information Sheet, Objective 9, p. 7.

______12. **Do** Assignment Sheet 5—Write Test Items for Performance Objectives, pp. 25-29.

Learning Steps

______13.	**Stop**	Ask teacher to evaluate completed assignment sheet. If satisfactory continue to step 14. If not satisfactory, repeat steps 11 and 12.
______14.	**Take**	Written Test (See teacher). If your score is 85 percent or above, continue to step 15. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.
______15.	**Sign**	Unit Evaluation Form to verify ratings received on assignment sheets and written test.

***Permission to duplicate this form is granted.**

Writing Performance Objectives

Teacher Supplement 1—Levels of the Cognitive Domain

- **Knowledge**—Involves the recall of specific information, the recall of methods and processes, or the recall of a pattern, structure, or setting

  Note: For measurement purposes, the recall situation involves little more than bringing to mind the appropriate material.

  Examples of action verbs: List, label, define, repeat, name, fill in, identify

- **Comprehension**—Refers to a type of understanding such that the individual knows what is being communicated and can make use of the materials without necessarily relating it to other materials or realizing its fullest implications

  Examples of action verbs: Explain, match, discuss, interpret, distinguish, comprehend

- **Application**—Use of abstracts in the form of general ideas, rules or procedures, or generalized methods in particular and concrete situations

  Examples of action verbs: Apply, construct, draw, use, assemble, disassemble, demonstrate

- **Analysis**—Breakdown of a communication into its constituent elements or parts such that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit.

  Note: This shows the relationship of the parts to the whole.

  Examples of action verbs: Analyze, choose, categorize, differentiate

- **Synthesis**—Put together elements and parts so as to form a new whole.

  Note: This is the creative level.

  Examples of action verbs: Combine, create, plan, design, organize, compile, devise, rewrite, generate

- **Evaluation**—Judge values and methods for given purposes using given standards or developing one's own criteria.

  Examples of action verbs: Appraise, defend, assess, evaluate, determine, compare

Writing Performance Objectives

Teacher Supplement 2—Use of the Cognitive Domain

If you can identify:	The objective is testing:	Key action verbs are:
What student must remember	Knowledge	List, define, label, repeat, name, fill in, identify
What student must restate in other words	Comprehension	Explain, match, discuss, interpret, distinguish, comprehend
What information is to be used	Application	Apply, construct, draw, use, assemble, disassemble
What is "broken down parts"	Analysis	Analyze, choose, categorize, differentiate
What two or more pieces of information are to be combined	Synthesis	Combine, create, plan, design, organize, compile
What students are to express	Evaluation	Appraise, defend, assess, evaluate, determine, compare

Writing Performance Objectives

Teacher Supplement 3—Levels of the Psychomotor Domain

- **Perception**—Process of becoming aware of objects, qualities, or relations by way of the sense organs.

  Note: This is the main portion of the situation-interpretation-action chain leading to motor activity.

- **Set**—Preparatory adjustment for a particular kind of action or experience.

  Note: Three different distinct aspects of set have been identified: mental, physical, and emotional.

- **Guided Response**—Overt behavioral act of an individual under the guidance of another individual.

  Note: Emphasis is upon the abilities that are components of a more complex skill.

- **Mechanism**—Student has achieved a certain confidence and degree of skill in the performance of an act.

  Note: The habitual act is a part of the student's repertoire of possible responses to stimuli and the demands of situations where the response is appropriate.

- **Complex Overt Response**—Individual can perform a motor act that is considered complex because of the movement pattern required.

  Note: The act can be carried out efficiently and smoothly, that is, with a minimum expenditure of energy and time.

Once the teacher/writer has mastered the technique of picking out the action verb and has learned to use that verb as a descriptor for the performance of the student, these "doing" objectives are probably easier to write than those in the cognitive or affective domain.

Writing Performance Objectives

Teacher Supplement 5—The Three Little Pigs

Part A

Predict what would happen if your house were blown away.

Teacher Supplement 5

Part B

- **Recall Key Facts From the Story "The Three Little Pigs."**

- **In Your Own Words, Tell What Happened To the Pigs.**

- **What Would You Do If a Bad Person Knocked on Your Door?**

- **How Were the Pigs' Houses Different?**

- **What Would Have Happened If a Police Officer Were Present?**

- **Explain Why You Think the Pigs Were Good Thinkers or Bad Thinkers.**

Writing Performance Objectives

Information Sheet

1. **Terms and definitions**

   a. **Condition** — Describes situation under which task will be performed

   b. **Duty** — A group of tasks that are related to each other by the nature of the work to be performed; cluster of related tasks

   c. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

   Note: An evaluation activity may be verbal, nonverbal, manipulative, or any type of performance, provided it is appropriate for measuring the objective.

   d. **Learner outcome** — Expectation of student performance upon completion of instruction

   e. **Learning** — A change in a student's behavior due to an educational experience

   f. **Performance objective** — A statement of what the student must do in observable or measurable terms

   g. **Process evaluation** — Measure of a student's ability to perform a given procedure

   Note: This is also referred to as a formative evaluation.

   h. **Product evaluation** — Rating the product of a student's performance

   Note: This is also referred to as a summative evalution.

   i. **Standard** — Criteria which specify exactly what constitutes successful completion of a prescribed performance

   j. **Student (Learner)** — One who receives instruction

   k. **Task** — Unit of work with a definite beginning and ending which is measurable and observable; consists of two or more definite steps

2. **Instructional intent of a performance objective**

   a. Clarify what outcomes are expected from the student.

   Note: Outcomes should be expressed in terms of the desired results of instruction.

Information Sheet

b. Define outcomes in terms of specific changes in student behavior.

Note: When objectives are viewed as outcomes, and are defined in terms of changes in student behavior, numerous types of behavioral change can be included. Outcomes in the areas of thinking skills, performance skills, attitudes, interests, appreciations, and adjustments can be considered, as well as the more obvious knowledge outcomes.

3. Advantages of using performance objectives

a. Makes course content clear

b. Allows for focusing resources toward measurable goals

c. Aids in selection of instructional materials

d. Aids teacher in objectively evaluating instruction

e. Assists with student motivation

f. Facilitates development

g. Assists in student recruitment

h. Aids in public relations

i. Provides accountability of instruction

4. Things to do before writing performance objectives

a. Locate or write a job or program description.

b. Determine performance tasks.

c. Determine basic academic and workplace skills.

d. Determine the major characteristics of the target population.

e. Select the tasks for which instruction can appropriately be provided.

f. Determine specificity of objectives.

g. Establish course prerequisites.

Information Sheet

5. Components of a performance objective

a. Statement of conditions (givens) to let students know what will be available to them when they begin

Note: Frequently, the conditions identify the testing situation used to determine student achievement of the objective.

Example: Given a list of ten examples . . .
Given an unthreaded sewing machine . . .
Without the aid of texts, notes, or other reference materials . . .

b. Measurable behavior or action that can be observed as evidence the student has achieved the intended outcome.

Note: In a performance objective, the student's behavior is a precise, observable, and measurable outcome which describes in terms of action what the student will be required to do. Action verbs are more effective and directly observable in describing outcome behaviors.

Examples: Define in writing . . .
Write a report . . .
Construct a . . .

c. Standards (criteria) which specify exactly what constitutes successful completion of that action.

Note: The standards communicate to the student the quantity or quality of how well he or she is expected to complete the task. The criteria should not be arbitrarily set, but based on the performance level needed on the job.

Examples: . . . with a minimum score of 85 percent on the unit test.
. . . to within ± .001 of the working drawing dimensions.
. . . according to the manufacturer's specifications.

6. Domains of the Taxonomy of Educational Objectives

a. Cognitive—Deals with recall or recognition of knowledge and the development of intellectual abilities and skills (knowing)

Note: The cognitive domain is sometimes referred to as Bloom's taxonomy.

Levels: Knowledge, comprehension, application, analysis, synthesis, and evaluation

Information Sheet

b. Psychomotor—Deals with the physical responses of the student and the development of manipulative skills (doing)

Levels: Perception, set, guided response, mechanism, and complex overt response

c. Affective—Deals with changes in interest, attitudes, and values and the development of appreciations and adequate adjustment (feeling)

Levels: Receiving, responding, valuing, organization, and characterization

7. **Criteria for writing performance objectives**

   a. State the conditions, behavior, and standards to be expected in terms of student performance.

   b. List the subject matter which should be covered.

   c. Use only one action verb stated in precise terms.

   d. State in such a way that a test item can be developed to determine if the student has reached that objective.

8. **Process for developing criteria for performance objectives**

   a. Work with advisory committees.

   Note: The key question to keep in mind is: What's important for the program completer to know and be able to do before they enter a specific job market?

   b. Collect job and/or program and task information.

   c. Ask questions to analyze a job and/or program.

   Note: Questions to ask should include:
   What does the worker do?
   How does the worker do it?
   Why does the worker do it?
   What skills does the worker require to do it?
   What does the worker need to know to do it?

   d. Verify the task and criteria by surveying workers.

   Note: Questions to ask include:
   What is the importance of the task?
   How often does worker perform task?
   What is the acceptable performance standard?

Information Sheet

9. **Criteria for writing test items**

    a. Provide criterion-referenced evaluation.

    b. Align test items to performance objectives.

    c. State in clear, concise language.

Writing Performance Objectives

Student Supplement 1—Verb List for the Cognitive Domain

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
define	convert	change	break down	categorize	appraise
describe	defend	compute	diagram	combine	compare
identify	distinguish	demonstrate	differentiate	compile	conclude
label	estimate	discover	discriminate	compose	contrast
list	explain	manipulate	distinguish	create	criticize
match	extend	modify	identify	devise	discriminate
name	generalize	operate	illustrate	design	explain
outline	give	predict	infer	explain	justify
reproduce	infer	prepare	outline	generate	interpret
select	paraphrase	produce	point out	modify	relate
state	predict	relate	relate	organize	summarize
	rewrite	show	select	plan	support
	summarize	solve	separate	rearrange	
		use	subdivide	reconstruct	
				relate	
				reorganize	
				revise	
				rewrite	
				summarize	
				tell	
				write	

Writing Performance Objectives

Student Supplement 2—Verb List for the Psychomotor Domain

assemble
build
calibrate
change
clean
compose
connect
construct
correct
create
design
dismantle
drill
fasten
fix
follow
grind
grip
hammer
heat
hook
identify
locate
make
manipulate
mend
mix
nail
paint
sand
saw
sharpen
set
sew
sketch
start
stir
use
weigh
wrap

Writing Performance Objectives

Student Supplement 3—Verb List for the Affective Domain

Receiving	Responding	Valuing	Organization	Value Complex
ask	answer	complete	adhere	act
choose	assist	describe	alter	discriminate
describe	comply	differentiate	arrange	display
follow	conform	explain	combine	influence
give	discuss	form	compare	listen
hold	greet	initiate	complete	modify
identify	help	invite	defend	perform
locate	label	join	explain	propose
name	perform	justify	identify	qualify
point to	practice	propose	integrate	question
select	present	read	modify	revise
set erect	read	report	order	serve
reply	recite	select	organize	solve
use	report	share	synthesize	use
	select	study		verify
	tell	work		
	write			

Writing Performance Objectives

Assignment Sheet 1—Select Components of Performance Objectives

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Identified all three components in each statement	______
Followed directions	______

Directions: Using each of the following statements, select the three components of a performance objective. Underline the behavior statement by a single solid underline, the conditions with a single broken line, and the standards by a double solid underline.

Example: Given straight-copy material, the student will type 45 words per minute with not more than five errors.

1. Given a list of five objectives, the student should be able to identify the behavior, the conditions, and the standard for each objective. (100% implied)
2. Given pictures of ten parts of a car engine, the student should be able to identify all ten of them orally by name within two minutes.
3. Given a fully-equipped power hacksaw, job specifications, work piece, steel rule, file, scribe, saw vise, and floor stand, the student should be able to measure and cut off material to + 1/16″ accuracy.
4. Given 10 pieces of metered reply mail, a postal scale, and a postage meter, the student should be able to affix the correct, current, first-class rate of postage with 100% accuracy.
5. Give the proper tools and Volvo repair manual, the student should be able to disassemble the Zenith carburetor on a Volvo 164 according to the manufacturer's specifications.
6. After completing this unit, the student should be able to define terms associated with performance objectives with eighty-five percent accuracy.

Writing Performance Objectives

Assignment Sheet 2—Distinguish Between Performance Objectives and Nonperformance Objectives

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Stated reasons why	______
Followed directions	______

Directions: Read the following list of statements. Circle "Yes" when the statement describes observable and/or measurable student behavior or "No" when the statement does not describe observable student behavior. In the space provided, state why you circled yes or no.

Example: Yes No After completing this unit, the student should be able to type forty words per minute with no errors.
Why? To type is observable. Forty words per minute with no errors is measurable.

Yes No 1. After completing this unit, the student should be able to adjust idle speed on an automobile according to the specifications of the operator's manual.

Why? ______________________________

____

Yes No 2. After completing this unit, the student should be able to understand the meaning of Ohm's law as related to electricity to the satisfaction of the instructor.

Why? ______________________________

____

Yes No 3. After completing this unit, the student should be able to transcribe dictation from a tape with a maximum of three errors.

Why? ______________________________

____

Assignment Sheet 2

Yes No 4. After completing this unit, the student should be able to illustrate the relationship between supply and demand by plotting each on a bar graph that has a point of intersection with 85 percent accuracy.

Why? ____________________

____

Yes No 5. After completing this unit, the student should be able to distinguish between cool- and warm-season plants by observing their growing habits to the satisfaction of the instructor.

Why? ____________________

____

Yes No 6. After completing this unit, the student should be able to lead a group discussion according to *Robert's Rules of Order*.

Why? ____________________

____

Writing Performance Objectives

Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Converted each nonperformance objective to a performance objective	______
Performance objective states conditions, behavior, and standards	______

Directions: Read the following list of nonperformance objectives. Convert these objectives so that they are performance objectives.

Example: After completing this unit the student should know how to use the recipe for baking a cake.
After completing this unit, the student should be able to use a recipe to bake a cake.

1. After completing this unit, the student should be able to understand the meaning of Ohm's law as related to electricity to the satisfaction of the instructor.

Modified objective: ______________________________

____

____

____

____

____

Assignment Sheet 3

2. After completing this unit, the student should demonstrate a working knowledge of converting common fractions to decimals.

   Modified objective: ______________________________

3. After completing this unit, the student should realize fully the difference between performance and nonperformance objectives.

   Modified objective: ______________________________

4. After completing this unit, the student should be familiar with the chemical formula for water.

   Modified objective: ______________________________

Assignment Sheet 3

5. After completing this unit, the student should understand the steps in solving a mathematical equation.

   Modified objective: ____

   ____

   ____

   ____

   ____

   ____

6. After completing this unit, the student should be able to read and understand the meaning of a poem within thirty minutes with 100 percent accuracy.

   Modified objective: ____

   ____

   ____

   ____

   ____

   ____

Writing Performance Objectives

Assignment Sheet 4—Write Performance Objectives

Name ______________________ Overall Rating ________

Evaluation criteria	**Rating**
Identified task	______
Wrote performance objectives for each task	______

When writing performance objectives, the following points should be remembered:

1. State the objective as an expected learner outcome.
2. Use an action verb that specifies definite, observable, and measurable behavior.
3. Describe the standard the student should demonstrate to achieve the objective.
4. Do not omit complex objectives simply because they are difficult to define in behavioral terms.

   Note: They may be more difficult to state, but not impossible.

   Example: Objectives covering areas such as critical thinking and appreciation

5. Behavior must be relevant to objective described.

Directions: Identify five tasks (knowledge, skills, or attitudes) required of students in a course, then write five performance objectives for these tasks.

1. Task: ______________________________

   ____

   Performance objective: ______________________________

   ____

   ____

Assignment Sheet 4

2. Task:

   Performance objective:

3. Task:

   Performance objective:

4. Task:

   Performance objective:

5. Task:

   Performance objective:

Writing Performance Objectives

Assignment Sheet 5—Write Test Items for Performance Objectives

Name ____________________ Overall Rating __________

Evaluation criteria	**Rating**
Wrote test item for each performance objective	______
Test item evaluated same behavior as stated on objective	______

Directions: Write a test item for each of the five performance objectives you wrote on Assignment Sheet 4. Be sure to test for the same behavior as called for by your objective.

Example: Performance objective: After completing this unit, the student should be able to distinguish between recyclables and nonrecyclables with 85 percent accuracy.

Information given:

1. **Recyclables and nonrecyclables**
    a. Recyclables
    - Materials
        - Paper: Newspapers, corrugated boxes, office papers, mixed papers
        - Plastic: Milk, soft drink, and other containers
        - Glass: Bottles and jars
        - Aluminum: Cans and other aluminum products
        - Steel: Appliances and other steel products
        - Scrap metal: Food cans, etc.
        - Wood: Pallets, lumber, etc.
        - Motor oils
    - Compost
        - Leaves, grass, and brush
        - Food wastes (vegetables - not meat)
        - Some other organic materials, such as paper contaminated with food

Assignment Sheet 5

b. Nonrecyclables

- Wastes heavily contaminated by food residues, household chemicals, or dirt
- Composite materials

  Examples: Aseptic boxes made of paper, foil, and adhesives, plastic-coated paper, furniture and appliances (other than their metal content)

- Miscellaneous inorganics, such as street sweepings

  Note: At present, approximately 10 percent of all U.S. solid waste is recycled, but experts estimate that its full potential may be as high as 50 percent.

Test item:

1. Distinguish between recyclables and nonrecyclables by placing an "X" next to the recyclables.

______a. Glass
______b. Aluminum
______c. Leaves, grass
______d. Waste contaminated with food residue
______e. Plastics
______f. Wood
______g. Paper
______h. Composite materials
______i. Furniture
______j. Street sweepings

Answers to test item: a, b, c, e, f

Assignment Sheet 5

1. Performance objective: ______________________________

____

____

Test item:

2. Performance objective: ______________________________

____

____

Test item:

Assignment Sheet 5

3. Performance objective: ______________________________

____

____

Test item:

4. Performance objective: ______________________________

____

____

Test item:

Assignment Sheet 5

5. Performance objective: ____________________

____

____

Test item:

Competency-Based Education

Developing Teaching/Learning Strategies

Developing Teaching/Learning Strategies is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Developing Teaching/Learning Strategies

Objective Sheet

Unit Objective

After completing this unit, the student should be able to determine appropriate teaching strategies for given learning situations. The student should demonstrate this competency by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to developing teaching/learning strategies with their definitions.
2. State teacher characteristics that support quality learning.
3. State strategies for meeting individual learning styles.
4. Select concepts of individualized instruction.
5. State guidelines to consider in selecting strategies for individualizing instruction.
6. State strategies for motivating students.
7. State teaching strategies to increase time on task.
8. Match techniques for instructional delivery with their appropriate description.
9. Arrange in order steps in the problem-solving approach.
10. State teaching goals for reinforcing basic skills.
11. State essential workplace basic skills.
12. Arrange in order the four stages for successful teaching/learning process.
13. Match strategies that must be done with instructional materials with their appropriate descriptions.
14. Distinguish between ways to localize and individualize instructional materials.

Objective Sheet

15. Discuss factors to consider when developing a lesson plan to teach a unit of instruction.

16. Discuss perceptions of individualized instruction. (Assignment Sheet 1)

17. Determine instructional activities that create a positive learning environment. (Assignment Sheet 2)

18. Solve problems using instructional strategies. (Assignment Sheet 3)

19. Select instructional techniques. (Assignment Sheet 4)

20. Complete a checklist for evaluating a lesson plan using the problem-solving approach. (Assignment Sheet 5)

21. Determine basic skills being reinforced by performance objectives. (Assignment Sheet 6)

22. Develop a lesson plan. (Assignment Sheet 7)

Developing Teaching/Learning Strategies

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.

2. Review Teaching Suggestions section that follows. Plan classroom activities.

3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.

4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.

5. Make transparency from transparency master included with this unit. This appears in the teacher edition only and is designed to be used with the following objective:

   TM 1—You've Got to Reach'em to Teach'em (Objective 6)

6. Make copies of any handouts that you plan to distribute to students.

7. Review instructions for evaluating student performance, and make copies of unit evaluation form.

Delivery and Application

8. Provide students with unit of instruction.

9. Discuss unit and specific objectives.

10. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.

11. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Evaluation

12. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

13. Make copies of the written test. Add or modify test items as needed.

Suggested Activities

14. Give written test.

15. Compile assignment sheet ratings and written test scores on the unit evaluation form.

16. Reteach and retest as required.

Teaching Suggestions

1. Introduce the unit by discussing the fact that the more we learn about how students learn, the more we grow as teachers. However we learn and whatever our current teaching mode, we have a responsibility to teach all students.

2. Use TM 1 in discussion of Objective 6.

3. Review Objective 7 and research time on task. A possible activity is to ask the group how they would spend $3,600 if they had only one hour or sixty minutes to spend it? Usually answers will be short-term, i.e., pay bills, travel, pay on car, buy clothes, buy computer, etc. Then ask if they were given $86,400 to spend in the next 24 hours how would they spend it? Answers are usually long-term, i.e., buy a house, invest, buy stock, farm as long as it lasts, etc. Convert to time on task in that there are 3,600 seconds in an hour, 86,400 seconds in a day. How well did we plan and spend our time. Explain that time is the most precious item a student brings to a teacher. Discuss strategies for improving time on task by illustrating if we could improve time-on-task in the classroom by one minute per student per day times 40 students times 175 days school year, we would increase time-on-task by 3,000 minutes or 50 hours per school year.

4. Use cooperative learning techniques to teach Assignment Sheet 2. Divide participants into groups of 4 to 6 people. Each group is to appoint or elect a recorder to complete the assignment sheet and a speaker to share their ideas with the larger group. Encourage them to brainstorm and invent specific, realistic ways to create a positive learning environment. Allow 10 minutes for them to complete assignment sheet. Call the session to order and allow speakers to share the groups' ideas one item at a time. Allow 30-40 minutes for the activity. Refer to Teacher Supplement 1—Cooperative Learning for more information on learning techniques.

5. Encourage teachers to use their school's lesson plan form, if available, when completing Assignment Sheet 7.

6. Provide students with an opportunity to share their feelings/thoughts about teacher/learning strategies. Use this activity to summarize unit content.

Suggested Activities

7. Discuss learning styles by emphasizing that there are many approaches. The three most common approaches are: (1) focus on the individual—advocated by Terry Gregoric, those who work with Jung's theories, and the *Myers-Briggs Type Indicator*; (2) application to curriculum design and to an instructional process—approaches taken by Bernice McCarthy (4MATS) and Kathy Butler; and (3) the diagnostic/prescriptive approach—methods taken by Rita and Ken Dunn and by Marie Carbo. Probably the most effective approach is a combination of these approaches. Also emphasize the need for long-term research in learning styles. Learning styles can help educators in a practical way to value diversity. It can help us to realize that we can set uniform objectives, but honor individual approaches. Learning styles can give us direction for changing the teaching/learning process and help us find ways for every student to be successful.

8. Discuss basic skills by emphasizing the importance of identifying and defining what the basic skills are. This must be done before teachers can develop teaching/learning strategies to reinforce those skills. Refer to Student Supplement 7—MAVCC's Basic Skills to assist in identifying basic skills being reinforced by instructional materials. MAVCC's basic skills are modeled after research done by ASTD and the U.S. Department of Labor on workplace basics.

9. Use Teacher Supplement 3—Critique the Directions of a Student in Applying Problem-Solving Techniques as a role-playing exercise when discussing Objective 9 and as an alternative to Assignment Sheet 5. Students could videotape the exercise so they could review the techniques.

10. Read Teacher Supplement 2—Individualization Alternatives before discussing Objectives 4 and 5 and completing Assignment Sheet 1.

11. Review Student Supplement 2—Teaching to a Student's Learning Strengths, Student Supplement 3—Research on the Human Brain and Learning, and Student Supplement 4—Strategies for Teaching Right-Brain, Global Thinkers before discussing Objective 3.

12. Have students complete Student Supplement 1—Self Evaluation to determine their perceptions of classroom management.

13. Use Student Supplement 5—Intervention Checklist before discussing Objective 8. This form was used by teachers when a student was being transferred from one classroom to another. Teachers were able to share what techniques were successful for that student.

14. Student Supplement 7—Teaching Strategies are techniques that have worked and are being shared with other teachers.

Suggested Activities

References Used in Developing This Unit

1. Able Insights. Dallas, TX: Center for Successful Learning, 1990.
2. Carnevale, Anthony P., Leila J. Gainer, and Ann S. Meltzer. *Workplace Basics: The Essential Skills Employers Want.* Alexandria, VA: American Society for Training and Development, 1990.
3. *Category C: Instructional Execution.* Athens, GA: American Association for Vocational Instructional Materials, 1986.
4. *Crossroads: A Handbook for Effective Classroom Management.* Oklahoma City, OK: Oklahoma Department of Education, 1990.
5. *Educational Leadership: Learning Styles and the Brain.* Alexandria, VA: Association for Supervision and Curriculum Development, Volume 48, No. 2, October, 1990.
6. Halasz, I. and J. Desy. *Managing Learning Time: A Vocational Educator's Handbook.* Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1984.
7. Hoover, Kenneth H. *College Teaching Today: A Handbook for Postsecondary Education.* Boston, MA: Allyn and Bacon, Inc., 1980.
8. Instructional units developed by Instructional Services Division. Stillwater, OK: Oklahoma Department of Vocational and Technical Education, 1989.
9. McCarthy, Brenda. *The 4MAT System.* Barrington, IL: Excel, Inc., 1986.
10. Notes from ASCD Workshop *Dimensions of a Comprehensive Program for Teaching Thinking.* Oklahoma City, OK: 1987.
11. Oen, Urban T. and David Dimmlich. *Identify Teaching/Learning Strategies and Management Techniques to Implement CBVE.* Addison IL: Competency-Based Individualized Vocational Education Consortium, 1985.
12. Pasch, Marvin, (et al). *Teaching Decision Making: Instructional Practices for the Successful Teacher.* New York: Longman Publishers, 1991.
13. Simon, Anita and Claudia Bryan. *You've Got to Reach'em to Teach'em.* Dallas, TX: Training Associates Press, Inc., 1984.
14. *Skylights: A Handbook for Teaching Thinking Skills.* Oklahoma City, OK: Oklahoma Department of Education, 1988.
15. *They're Trained, But Are They Employable.* Alexandria, VA: Vocational Education Journal, August 1987.
16. *What Works: Researching About Teaching and Learning.* Second edition. Washington, DC: United States Department of Education, 1987.

Suggested Activities

Suggested Supplemental Resources

1. *Educational Leadership*, Vol. 48, No. 2, October, 1990. Theme: Learning Styles and the Brain published by ASCD, 1250 North Pitt Street, Alexandria, VA 22314-1403.

   Note: This issue has numerous articles on learning styles and brain research. Articles of particular interest include:

   - "Rita Dunn Answers Questions on Learning Styles" by Rita Dunn; based on Learning Style Inventory (LSI) model

   - "Using the 4MAT System to Bring Learning Styles to School" by Bernice McCarthy; based on the 4MAT model

   - "Understanding a Brain-Based Approach to Learning and Teaching" by Renate Nummela Caine, and Geoffrey Caine; based on how the brain works research

   - "Developing a Defensible Learning Style Paradigm" by James W. Keefe and Barbara G. Ferrell. After a thorough review of literature a task force of the National Association of Secondary School Principals developed their own model of learning styles and built a test around its researched based elements.

   - "On Learning Styles: A Conversation with Pat Guild" by Ron Brandt; an interview with Pat Guild, senior author of ASCD's *March to Different Drummers*, advising the use of several different learning style models in the education process.

   - "A Critique of the Research on Learning Styles" by Lynn Curry; discusses learning style researcher's tendency to investigate only a part of the whole, but none with full understanding.

2. *You've Got to Reach'em to Teach'em: The Teacher's Guide to Communicating Styles Technology* by Anita Simon and Claudia Byram, published by Training Associates Press, Inc., Dallas, TX.

   Note: This publication shows step-by-step, practical applications by Paul Mok's "Communicating Styles Technology" (CST) learning styles model based on Carl Jung's communication theory. Jung, a contemporary of Sigmund Freud, developed a theory of personality based on behavioral functions, including intuition, thinking, feeling, and sensing.

3. *Professional Teacher Education Modular Series: Category C—Instruction*, is a 29-module series published and distributed by AAVIM, 745 Gaines School Road, Athens, GA 30605. Phone: (404) 543-7557.

Suggested Activities

4. Updates on the Southern Regional Educational Board (SREB) Vocational Education Consortium initiative to improve the communications, mathematics, and science competencies of students pursuing vocational studies may be obtained from:

   Gene Bottoms
   Director, SREB State Vocational Education Consortium
   592 Tenth Street, NW
   Atlanta, GA 30318-5790
   (404) 875-9211

5. Guild, Pat Burke and Stephen Garger. *Marching to Different Drummers*. Alexandria, VA: Association for Supervision and Curriculum Development, 1985. Excellent reading on individualizing instruction.

6. Kentucky Department of Education has developed a new-teacher inservice package including videos for teachers in their state. For more information contact:

   Kentucky Department for Adult and Technical Education
   Capital Plaza Tower
   Frankfort, KY 40601

Developing Teaching/Learning Strategies

Answers to Assignment Sheets

Assignment Sheet 1 — Answers may include the following:

1. a. **Individualized instruction is not new.** It is true that vocational-technical teachers usually know their students well and work closely with them as individuals. Even so, in most cases the amount of individualization is limited.

   The group lecture and the group demonstration tend to be the dominant methods of instruction. Projects are often the same for all students. Tests are given to the whole class at the same time, and they frequently cover just textbook readings. The slower learner or the one who prefers to learn by "doing" is usually at a disadvantage.

   Real individualization means that each student's learning rate, learning style, and personal interests are taken into account, and a cooperative plan for learning is worked out.

   b. **Students can't choose their own objectives/activities.** The ultimate goal of education may indeed be to prepare students to enter the world of work, but there are many paths to this goal. The knowledge and skill that students must possess can be acquired through a great variety of means, and individualization can provide those different means.

   As long as students achieve their occupational objectives, the speed at which they arrive (within reason) may not be so important as the fact that they do indeed get there. And in most occupations, there are a number of suboccupations or variations of duties so students may have many different educational and occupational objectives.

   The student's personal needs and the teacher's objectives of the course may differ somewhat, but it is the **student** who should be the primary focus of good instruction.

   c. **Individualized instruction means a lot of reading.** Even though the group lecture may be seldom used in individualized instruction, it does not follow that the poor reader will be abandoned. Remedial reading help can be arranged for the student for one thing. In addition, the teacher can put the required readings on audiotapes—a technique that often improves students' reading skills as well as furnishing them with the needed information.

Many other forms of instruction are also available, including slides, slide/tape presentations, films, film loops, diagrams and drawings, transparencies, student tutoring, small-group instruction, mini-demonstrations, and many more. In fact, in a well-prepared individualized setting, the poor or slower reader may have a better chance to learn than he/she ever had before.

d. **Individualized instruction would hurt production.** Customer work (or live work) is often an important and realistic part of education. There is no reason why customer work can't be included in individualized instruction as long as (1) it involves what the student needs to know, (2) it takes place when the student is ready for it, and (3) there is opportunity for individual learning goals to be met.

This may require skillful management on the part of the teacher. If there is a conflict between the demands of the customer work and the educational needs of the student, then the student's interests must of course be given precedence. Putting out production is not the primary goal of the program; student learning is.

2. Definitions of individualized instruction may vary, but most will include the following concepts:
    - Individuals differ in their aptitudes, interests, goals, and learning styles.
    - Instruction should be structured and managed to meet the needs of the individual student.
    - The students have a responsibility to help plan their learning activities and the freedom to carry cut the plans in their own personal way.
    - Whatever the approach to individualization, the ultimate purpose is the development of a personally mature student, ready to enter the world of work.

3. Individualized instruction is designed to meet the instructional needs of individual students. And students are expected to take responsibility for their own learning. Thus, it is important to spell out the objectives: what is to be learned by each learner, the conditions under which the learned performance is to occur, and the minimum level of acceptable performance.

Full accomplishment of each performance objective is expected of the learner, even though the time required to learn may vary. Individualized instruction focuses on learning objectives that the student has helped to identify, not simply on course content selected by the teacher.

Answers to Assignment Sheets

4. Students react well to being given some responsibility for their own education. They respond well to the freedom to choose their activities and move about actively. Since individualized instruction is designed to permit every student to succeed, many students can experience real success in school—perhaps for the first time.

   Success is very reinforcing and leads naturally to further success and to good feelings about everything associated with that success. If students are busy doing things they like to do and can go about it actively in their own way, they will be more interested in learning and less likely to be discipline problems.

5. Students have differing modality preferences and strengths. Some learn well by listening, some by seeing, and some by physically handling materials. If you are going to provide learning experiences to capitalize on these individual strengths, you need to provide listening experiences, visual experiences, and manual experiences. Thus, the wider the variety of instructional media available, the greater the opportunity to suit the learning experience to each individual.

6. Grading on the basis of a normal curve means that each student is evaluated on how his or her achievement compares to that of classmates during a specific time period. The normal bell-shaped curve is produced by chance and random selection and assumes that the student group is typical of the whole population.

   Education, on the other hand, is a purposeful activity designed to produce very specific results. The idea is now growing that a great many more students can succeed than we previously supposed.

   We should, therefore, evaluate students on their individual achievement, even if some take a longer time to achieve than others. There are a number of techniques that can readily be used to evaluate individuals, such as checklists of observable behavior, rating scales, performance tests, personal conferences, and individually administered objective tests.

Assignment Sheet 2—Student performance will be evaluated according to criteria listed.

Assignment Sheet 3—There are several possible answers. A possible answer is given for each problem. Answers should be evaluated according to the criteria listed.

A. The student may progress at his/her own rate within program guidelines.

B. A modular instructional approach allows for a greater degree of freedom and feasibility.

C. The student knows in advance what level of performance he/she must achieve.

Answers to Assignment Sheets

D. Teacher and students use a wide variety of instructional materials and learning activities.

E. The program should provide for opportunities for advance study of the work skills. The program may also operate on an open-entry/open-exit bases.

Assignment Sheets 4 and 5—Student performance will be evaluated according to criteria listed.

Assignment Sheet 6—Student performance will be evaluated according to criteria listed. If student adopted MAVCC's skill groups and definitions, possible answers for steps may include skill groups and definitions given in Student Supplement 7 and may include the following:

Skill Group	Sub Skill	Description
Foundation Skills	Reading	Comprehends written information for main ideas; applies in formation and concepts derived from printed materials; follows written directions
	Writing	Presents answers in a clear and understandable form; writes/prints legibly
Adaptability Skills	Problem solving	Demonstrates logical reasoning in reaching a conclusion
	Creative thinking	Uses imagination to create new ideas-teaching suggestions

An example of a teaching suggestion would be to discuss MAVCC's academic and workplace skills identified in Student Supplement 7 with students and develop a plan to implement the use of this skills list.

Assignment Sheet 7 — Student performance will be evaluated according to criteria listed.

Developing Teaching/Learning Strategies

Answers to Written Test

1.

a	7	e.	3
b.	2	f.	4
c.	8	g.	1
d.	6	h.	5

2. Answers should include four of the following:

   a. Communicates to students the type of behavior expected
   b. Knows when to exercise authority, when to involve students in decision-making process, and when to stand back and allow students to learn by doing
   c. Shows trust by sharing responsibility
   d. Understands behavior from the student's point of view
   e. Has a learner-centered curriculum
   f. Is mentally alert and prepared
   g. Accepts the students unconditionally and views the students as persons of worth

3. Answers should include six of the following:

   a. Give student credit for what he/she already knows.
   b. Identify what student needs to know and/or do.
   c. Give student options for learning.
   d. Allow student to proceed at his/her own rate within program guidelines.
   e. Make student accept more responsibility for his/her own learning.
   f. Allow student to evaluate his/her own progress.
   g. Allow student to move freely in classroom and laboratory.
   h. Provide competency-based curriculum which requires demonstrating mastery learning at the designated competency level.
   i. Evaluate student on his/her achievement of standards or criteria for each segment of the curriculum.
   j. Course or program length depends upon time required for a student to demonstrate competencies.

4. a, c, d, f, g, h, j, l, m

Answers to Written Test

5. Answers should include three of the following:

   a. Unit is planned with the though that all students can achieve the expected level of performance.
   b. Instruction includes a variety of instructional strategies.
   c. Unit contains only a very few overall objectives.
   d. Instructional objectives are established in advance of instruction.
   e. Unit provides some means for students to check their own progress.
   f. Unit is designed to lead to student mastery of that particular segment of instruction.
   g. An evaluation device is included so that the teacher and student can determine the student's readiness to go on to the next learning experience.
   h. Student grades are based on what the student has or has not learned.

6. Answers should include four of the following:

   a. Identify importance of learning to student.
   b. Use competition and cooperation.
   c. Know progress constantly.
   d. Praise and reward.
   e. Use curiosity, realism, surprise, and variety.
   f. Keep class as active as possible.
   g. Be aware of class morale.

7. Answers should include five of the following:

   a. Treat time as an important resource.
   b. Define individual and class goals clearly.
   c. Plan and organize class activities in advance.
   d. Use a wider range of teaching methods.
   e. Have positive expectations of students and reinforce them in a positive manner.
   f. Encourage students to work independently.
   g. Assign meaningful tasks.
   h. Minimize scheduled whole-class breaks.
   i. Decrease opportunities for interruptions from outside classroom.
   j. Serve as a role model for the world of work.

8.

a.	5	h.	6	o.	17	v.	21
b.	1	i.	10	p.	13	w.	27
c.	4	j.	9	q.	14	x.	22
d.	2	k.	11	r.	19	y.	23
e.	3	l.	15	s.	18	z.	24
f.	8	m.	12	t.	20	aa.	26
g.	7	n.	16	u.	28	bb.	25

Answers to Written Test

9. a. 2
   b. 3
   c. 4
   d. 1
   e. 6
   f. 8
   g. 5
   h. 7

10. Answers should include:

    a. Emphasize basic skills when assessing and evaluating students.
    b. Reinforce the relationship between academic and vocational and/or applied skills.
    c. Emphasize importance of mastery of basic skills for continued learning on the job.
    d. Teach students how to think for a living.

11. Answers should include four of the following:

    a. Employers want employees who possess sound academic skills.
    b. Employers want employees who know how to learn.
    c. Employers want employees who can communicate orally.
    d. Employers want employees who possess adaptability—the ability to solve problems and think creatively.
    e. Employers want employees who have solid personal and career development skills.
    f. Employers want employees who can function effectively on a team.
    g. Employers want employees who motivate themselves and others.

12. a. 4
    b. 1
    c. 3
    d. 2

13. a. 2
    b. 4
    c. 3
    d. 1

14. a. L
    b. I
    c. I
    d. I
    e. L

Answers to Written Test

15. Discussion should include:

    a. Determine the lesson objective.
    b. Determine instructional material needs.
    c. Determine motivational strategies.
    d. Localize and individualize each assignment and/or job sheet for your teaching situation.
    e. Determine individualized assignments.
    f. Determine strategies for reinforcing basic skills.
    g. Develop presentation outline.
    h. Determine lesson summary and review items to be used to evaluate the lesson against the lesson objective.
    i. Determine strategy for administering tests.
    j. Indicate approximate length of time needed to teach.

Developing Teaching/Learning Strategies

Written Test

Name ______________________________ Score ______________

1. Match terms related to developing teaching/learning strategies on the right with their definitions.

______a. Process in which the student progresses at his/her own rate toward stated objectives

______b. A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

______c. One who receives instruction

______d. A statement of what the student must do in observable and measurable terms

______e. Student-centered instruction in which the materials and activities are tailored to meet the needs of the individual student

______f. A change in a student's behavior due to an educational experience

______g. The academic and occupational competencies (workplace skills) needed to function in a technologically advanced society

______h. Most efficient and effective method of learning for an individual

1. Basic skills
2. Evaluation
3. Individualized Instruction
4. Learning
5. Learning style
6. Performance objective
7. Self-paced instruction
8. Student

2. State four teacher characteristics that support quality learning.

a. ______________________________

____

b. ______________________________

____

Written Test

c. ______________________________

____

d. ______________________________

____

3. State six strategies for meeting individual learning styles.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

e. ______________________________

____

f. ______________________________

____

4. Select concepts of individualized instruction by placing an "X" by each concept.

______a. Needs, abilities, and interests of individual students become one of the prime focal points around which the instructional program centers.

______b. Student has few alternatives from which to choose.

______c. Students are encouraged to become more active, involved, and responsible for their own instruction.

______d. Teacher becomes less a presenter of lectures and demonstrations and more a learning manager and guide.

Written Test

______e. Instruction is teacher-centered.

______f. Learning objectives are clearly stated in performance terms.

______g. Varied alternative and optional learning experiences are available to meet the stated objectives.

______h. Strategies or methods of instruction are designed to reach students as individuals.

______i. Program or course length depends upon an arbitrary pre-set time limit.

______j. A variety of media and instructional resources are employed.

______k. Information is primarily provided through lecture and demonstration.

______l. Learning environment is designed for flexibility and variety.

______m. Students are evaluated in terms of individual performance and not by comparison with others.

5. State three guidelines to consider in selecting strategies for individualizing instruction.

a. ______________________________

____

____

b. ______________________________

____

____

c. ______________________________

____

____

Written Test

6. State four strategies for motivating students.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

7. State five strategies for improving time on task.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

e. ______________________________

8. Match techniques for instructional delivery on the right with their descriptions.

______a. Use of a set of sequence of still or motion pictures, a recording of voices or sounds, or a combination of both

______b. Student performance of a set of actions to verify principles or hypotheses or to collect data in order to examine such principles or hypotheses

______c. Practice in performing cognitive or psychomotor activities to improve student abilities

______d. Asking students questions to assess levels of learning or to encourage discussion or speculation

______e. Use of replica or three-dimensional representation of an actual object or device

1. Experiment
2. Questioning
3. Model presentation
4. Specific skill development project
5. Audio/visual presentation

Written Test

______f. Showing the step-by-step procedure required to complete a task

______g. Supervised conversation in which students share their ideas with others

______h. Discussion that concentrates on developing a large number of ideas without weighing their merit

______i. Small group designed to complete one or more clearly defined tasks

______j. Use of games to stimulate thinking or as a structure for asking questions

______k. Small group discussion (3 to 8 students) in which students plan activities or react to large group discussions or assignments

______l. Structured presentation by several individuals (student participates as an observer or presenter)

______m. Examination of human interaction by observing or experiencing realistic, spontaneous behavior in an imaginary situation

______n. Passive observation on part of a student of displays or activities to increase understanding or appreciation

______o. Use of hardware and software programs to facilitate the learning process

______p. Oral exposition of facts, principles, procedures, feelings, or directions by teacher

______q. Allows comments and questions by students

6. Brainstorming
7. Discussion
8. Manipulative skill demonstration
9. Gaming
10. Committee
11. Buzz session
12. Role playing
13. Formal lecture
14. Informal lecture
15. Seminar
16. Consumer project
17. Computer software

Written Test

_______r. Acquiring information or opinions from specialists through the use of probing questions

_______s. Practice in performing cognitive or psychomotor activities under conditions which only approximate the full task

_______t. Structured group experience for two to six students who have a specific task to complete and is used for guided practices of tasks to do, for problem solving and higher order thinking skills, and for tasks that are more creative or review oriented

_______u. Structured discussion of a question or issue involving the presentation of opposing opinions

_______v. Visit by a group of students to places outside the classroom for the purpose of firsthand observation

_______w. Formal or informal lecture given by someone other than the teacher

_______x. Application of learning in which teacher is involved

_______y. Application of learning in which teacher is not involved

_______z. Illustrating how scientific laws or other principles work

_______aa. Attempt by student to develop a solution or plan of action when faced with a problem or complicated task

_______bb. Creative effort on part of student to produce a design or product consistent with concepts or principles being studied

18. Exercise
19. Interviewing
20. Cooperative learning
21. Field trip
22. Guided practice
23. Independent practice
24. Physical principle demonstration
25. Producer project
26. Problem-solving project
27. Guest lecture
28. Debate

Written Test

9. Arrange in order the steps in the problem-solving approach. In the space provided, place a "1" for the first step, a "2" for the second step, and so on.

______a. Identify all major factors involved in the problem

______b. Gather needed information

______c. Determine possible solutions

______d. State and define the problem

______e. Select best possible solution

______f. Assess the results

______g. Evaluate each possible solution

______h. Evaluate the solution

10. State teaching goals for reinforcing basic skills.

a. ______________________________

____

b. ______________________________

____

c. ______________________________

____

d. ______________________________

____

Written Test

11. State four of the seven workplace basic skills.

a. ____

____

b. ____

____

c. ____

____

d. ____

____

12. Arrange in order the four stages for successful teaching/learning process by placing a "1" in the blank for the first stage, a "2" for the second stage, and so on.

______a. Evaluation stage

______b. Preparation stage

______c. Application stage

______d. Delivery stage

13. Match strategies that must be done with instructional materials on the right with their appropriate descriptions.

______a. Make instructional materials relevant to community and workplace

______b. Make instructional materials relevant to individual

______c. Provide additional information or resources

______d. Stimulate the need or desire to act

1. Motivate
2. Localize
3. Supplement
4. Individualize

Written Test

14. Distinguish between ways to localize and individualize instructional materials. Place an "L" for localize and "I" for individualize in the blank next to the appropriate way.

    ______a. Apply units to needs of community

    ______b. Assess students' learning styles

    ______c. Relate to students' objectives

    ______d. Include students in planning

    ______e. Use advisory committee

15. Discuss factors to consider when developing a lesson plan.

    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____
    ____

***Permission to duplicate this test is granted.**

Developing Teaching/Learning Strategies

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Discuss Perceptions of Individualized Instruction Rating ______

Comments: ____

____

Assignment Sheet 2—Determine Instructional Activities that Create a Positive Learning Environment Rating ______

Comments: ____

____

Assignment Sheet 3—Solve Problems Using Instructional Strategies Rating ______

Comments: ____

____

Assignment Sheet 4—Select Instructional Techniques Rating ______

Comments: ____

____

Assignment Sheet 5—Complete a Checklist for Evaluating a Lesson Plan Using the Problem-Solving Approach Rating ______

Comments: ____

____

Assignment Sheet 6—Determine Basic Skills Being Reinforced by Performance Objectives Rating ______

Comments: ____

____

Assignment Sheet 7—Develop a Lesson Plan Rating ______

Comments: ____

____

Unit Evaluation Form

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ____

____

Teacher Signature ______________________ Date __________

Student Signature ______________________ Date __________

***Permission to duplicate this form is granted.**

Developing Teaching/Learning Strategies

Learning Steps

Name ____

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Do** Student Supplement 1—Self Evaluation, pp. 15 and 16.

______ 3. **Study** Information sheets, Objectives 1 through 5, pp. 3-6.

______ 4. **Read** Student Supplement 2—Teaching to a Student's Learning Strengths, pp. 17 and 18; Student Supplement 3—Research on the Human Brain and Learning, pp. 19 and 20; and Student Supplement 4—Strategies for Teaching Right-Brain, Global Thinkers, pp. 21 and 22.

______ 5. **Do** Assignment Sheet 1—Discuss Perceptions of Individualized Instruction, pp. 41-43.

______ 6. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 7. If evaluation is not satisfactory, repeat steps 3 through 5.

______ 7. **Study** Information Sheet, Objective 6, pp. 6 and 7.

______ 8. **Do** Assignment Sheet 2—Determine Instructional Activities That Create a Positive Learning Environment, pp. 45 and 46.

______ 9. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 10. If evaluation is not satisfactory, repeat steps 7 and 8.

______10. **Do** Student Supplement 5—Intervention Checklist, pp. 23-25.

______11. **Study** Information Sheets, Objectives 7 and 8, pp. 7-9.

______12. **Read** Student Supplement 6—Teaching Strategies, pp. 27-35.

______13. **Do** Assignment Sheet 3—Solve Problems Using Instructional Strategies, pp. 47 and 48, and Assignment Sheet 4—Select Instructional Techniques, pp. 49 and 50.

332

Learning Steps

______14. **Stop** Have teacher evaluate each completed assignment sheet. If evaluations are satisfactory, continue to step 15. If an evaluation is not satisfactory, repeat steps 10 through 13, completing only the assignment sheet for which you received an unsatisfactory rating.

______15. **Study** Information Sheets, Objective 9, pp. 10 and 11.

______16. **Do** Assignment Sheet 5—Complete a Checklist for Evaluating a Lesson Plan Using the Problem-Solving Approach, pp. 51-54.

______17. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 18. If evaluation is not satisfactory, repeat steps 15 and 16.

______18. **Study** Information Sheets, Objectives 10 and 11, pp. 11 and 12.

______19. **Read** Student Supplement 7—MAVCC's Basic Skills, pp. 37-39.

______20. **Do** Assignment Sheet 6—Determine Basic Skills Being Reinforced by Performance Objectives, pp. 55-57.

______21. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 22. If evaluation is not satisfactory, repeat steps 18 through 20.

______22. **Study** Information Sheets, Objectives 12 through 15, pp. 12-14.

______23. **Do** Assignment Sheet 7—Develop a Lesson Plan, pp. 59-63.

______24. **Stop** Have teacher evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 25. If evaluation is not satisfactory, repeat steps 22 and 23.

______25. **Take** Written Test. (See teacher) If your score is 85 percent or above, continue to step 26. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______26. **Sign** Unit Evaluation Form to verify ratings received on assignment sheets and written test scores.

Developing Teaching/Learning Strategies

Teacher Supplement 1—Cooperative Learning

Cooperative learning is a structured group experience for two to six students who have a specific task to complete, and it is especially successful when it is used for guided practice of tasks to do, for problem solving and higher order thinking skills, and for tasks that are more creative or review oriented.

Several educators, including Roger and David Johnson, have researched the values of three types of learning in the classroom—cooperative, competitive and individualistic—and note that cooperative learning, when properly implemented, is especially powerful in promoting thinking and problem solving in the classroom. (Johnson and Johnson, 1985.)

To best use cooperative groups, analyze your existing curriculum placing it into three categories:

1. Whole class instruction can be used for about 50 to 60 percent of the existing content curriculum.
2. Cooperative learning groups are effective for about 25 to 30 percent of the school curriculum.
3. Independent learning, with provisions for individual differences may be applicable for 15 to 20 percent of the curriculum.

Benefits of cooperative grouping:

1. Research has shown that using cooperative learning groups not only helps students excel on rote-level skills but that students' cooperative study of academic materials has led to superior achievement in problem solving and higher-level thinking skills as well.
2. High achieving students as well as lower achieving students show superior academic gains with small-group learning.
3. Social skills and relationships between students of different ethnic backgrounds are enhanced by a cooperative learning environment. (Slavin, 1981 and Madden and Slavin, 1976.)
4. A group of people working together can make better plans than can be made by one person. An idea presented by one member of a group sets off a chain of ideas from other members. (Ragan, Wilson, and Ragan, 1972, p. 71.)
5. As students make contributions to group enterprises, they can see their own ideas incorporated in the planning of the group. In the process, they gain self-confidence, strive harder to improve skills, and make progressively better contributions. (Ragan, Wilson, and Ragan, 1972, p. 22.)

Teacher Supplement 1

Guidelines for implementing cooperative groups:

1. Mix the groups so that there is a balance, of gifted or above average students, average students, and slower learning students. Rotate groups so that there is a constant variation allowing most students to work with most other students. With this interaction, gifted students are taught to be understanding and respectful of students who might think more slowly than they; and slower students have models to copy in problem solving and thinking behaviors. The slower students will be allowed to achieve success regularly. This in turn increases motivation.

2. Assign task roles such as group leader, recorder, materials person, and reporter, and have students exchange roles periodically to ensure that each and every team member assumes certain responsibilities which help to make the group process work smoothly. When assigning roles, try to ensure rotation so that all students learn all tasks. Any time that an unresolvable conflict arises, regroup for the sake of saving already fragile self-esteem.

3. Explain the task to be completed with clear, specific instructions and criteria. Provide examples to model high quality products which you expect from the group work. Make it possible for all to reach the criteria without penalizing others. Especially in the beginning of the year, check for understanding by asking one or more students to explain your instructions in their own words.

4. Remind each group of their interdependence. They have a team goal and must work cooperatively. They will sink or swim together, since the final product is a group product. Members of cooperative learning groups should give two interrelated messages. "Do your work—we're counting on you!" and "How can I help you to do better?"

5. Inform each group they are responsible for making sure that every individual masters the thinking skill. The teacher could provide group rewards (free time, extra recess) for any group which reaches a preset criterion.

6. List desired behaviors so students know for which intelligent behaviors you are looking. For instance, they should at least exhibit acceptance of other ideas, offer some original ideas, stay on task together, and participate in the discussion.

7. Observe group behaviors by recording data you can later share with students. Your checklist could include: contributing ideas, expressing support and acceptance, clarifying and testing options. When the groups seem to have mastered a skill, individual competence is determined by an assignment done only by the individual, by a test of the individual, or by the teacher interview and observation of individuals.

8. Remove the disruptive student from the group, but hold responsible for completing the material on his or her own.

9. If breakdowns occur, the best cure is to stop the group, discuss the difficulty, and encourage students to refine the classroom rules. You will find that they value the group learning so highly that they will police their own problems and return promptly to the challenge of thinking.

10. After the lesson, note positive and negative occurrences, encouraging student comments. (Could use written form with group.) Then privately critique the lesson in writing, including best-worst features and what to change next time.

    Students have heard of cooperation, but may not have had a lot of practice working cooperatively. The teacher needs to define cooperation by specifying desirable behaviors for small group work. When beginning, use just a few admonitions: Take turns, speak quietly, stay with your group, use names when speaking to or about someone. Marilyn Burns uses only three rules in group work:

    a. You are responsible for your own work and behavior.

    b. You must be willing to help any group member who asks.

    c. You may ask for help from the teacher only when everyone in the group has the same question. (Burns, 1981, p. 47.)

Key Attributes of Cooperative Learning models:

1. positive interdependence (achieved through mutual goals, divisions of labor, dividing resources or information among members, assigning students, giving joint rewards);

2. face-to-face interaction among students;

3. individual accountability for mastering the assigned materials;

4. appropriate use of interpersonal and small-group skills.

   (Johnson and Johnson, 1985, p. 100.)

"There is more to the teacher's role in structuring cooperative learning situations, however, than structuring cooperation among students. The teacher's role includes five major sets of strategies. These include:

1. Clearly specifying the objectives for the lesson.

2. Making decisions about placing students in learning groups before the lesson is taught.

3. Clearly explaining the task, goal structure, and learning activity to the students.

4. Monitoring the effectiveness of the cooperative learning groups and intervening to provide task assistance (such as answering questions and teaching task skills) or to increase students' interpersonal and group skills.

5. Evaluating students' achievement and helping students discuss how well they collaborated with each other." (Johnson and Johnson, 1984, p. 25 and 26.)

All students can and do benefit from the cooperative learning model. As the group works toward the common goal, all team members must understand the process and take part in it. The better able students can orally and perhaps in written form make evident to the group their problem-solving processes through modeling and through debate and discussion. All students gain from discussion. There is growing evidence that talking is an integral part of thinking/conceptualizing.

Kay Johnson
Flower Mound School

Developing Teaching/Learning Strategies

Teacher Supplement 2—Individualization Alternatives

Fallacy		*Reality*	*Individualization Alternatives*
1.	Students learn by listening.	Some students learn by listening, others learn by seeing, others must learn by touching or acting out and many by differing combinations of these. Children and adults learn through different perceptions, and although repetition through varied perceptions tends to *reinforce* learning, information, skills, and values should be introduced through major perceptual strengths.	Students are given options within a structure to elect how they will learn selected material. Reinforcement through additional perceptual means is provided, but the youngsters determine how they will initially begin the learning process related to their instructional objectives. This process leads to student decision-making, responsibility, and ultimate accountability, given other important factors such as realistic teacher expectations.
2.	A class of 25 students can learn identical content in the same specified amount of time.	Children (and adults) absorb varying amounts of content at different rates and at different times; they also vary in the amount and type of content they *retain.*	Students are given approximate time intervals during which they may complete their instructional objectives, but are permitted to pace themselves and to determine the amount of study and number of objectives with which they can cope. This process is guided by the teacher to encourage continuous achievement.
3.	All students can learn in depth if they will only concentrate.	All students can learn *something* about a given topic, but each has greater or lesser capacity to absorb details, concepts, and nuances. Here, too, much depends on the interest, the frame of reference, the maturity level, and the elements of training and experience for each youngster.	In conservative individualized programs, students are given instructional requirements and are then permitted some instructional options. In an open-ended individualized program, youngsters are permitted to study what most stimulates and absorbs them. A happy medium would lie somewhere between, based on the recognition that most schools follow a definite (though flexible) curriculum, but that people learn most easily when they are interested in the subject.
4.	A quiet school is a good school.	A consistently quiet school is often a subdued school where students have been trained or coerced into patterns of behavior that are often unnatural to healthy youth.	Some students require a quiet environment in which to learn, while others need verbal and sometimes social interaction; most youngsters require one or the other and combinations of each at different times. An effective individualized program permits the learners to determine whether they will work alone, in pairs, or in small groups. Unnecessary noise is as inconsistent with a well-functioning program as is continuing silence. The busy, self-controlled sound of student and teacher interaction and activity is part of an effective learning environment.

Teacher Supplement 2

	Fallacy	*Reality*	*Individualization Alternatives*
5.	Children should be admitted to school when they are five years of age.	Children should be admitted to school when they are "ready" to learn.	
	or	or	
6.	Students should be in school for the same amount of time each day.	Students should be in school for the amount of time during which they are capable of being attentive, studious, positively involved and relaxed.	Students should be repeatedly diagnosed, prescribed for, and guided through the learning process. Some children should enter a formal or semi-formal educational program earlier or later then other children, remain in school for varying amounts of time, be provided different kinds of experiences, and be encouraged to formulate programs that vary extensively in terms of environment, objectives, resources, activities, focus, and self-direction.
	or	or	
7.	Youngsters should be maintained in school until they are 16 years of age.	Youngsters should be maintained in school until they can no longer obtain positive learning experiences. Alternative programs, both in and out of school, should be provided for students who would benefit from them.	
8.	It is better for children to remain on "grade level" with youngsters of the same chronological age than to study with either much younger or much older learners.	It is better for children to be working at their maximum individual capacities with different age groups than to be either bored by the lack of intellectual challenge or frustrated by being unable to compare themselves favorably with their peers.	Interage groupings that change with subject and interest areas are common. The rhetoric about academic superiority frequently being inconsistent with emotional maturity holds little weight; there is no evidence to substantiate that keeping the bright, immature child with his age peers contributes to either his maturity or his adjustment.
9.	There are special teaching methods that are panaceas for instructing children, e.g., "discovery" in social studies, "phonics" in reading, "experimentation" in science, etc.	Since children learn most easily through their strongest perceptual strength, the instructional method should relate directly to that mode. A cognitive, conceptual learner who enjoys reading may learn easily through discovery. The child who learns by talking and listening may not. A child who learns visually may experience difficulty with an essentially phonics approach. The youngster who learns tactually will delight in the experimentation, whereas the phonetically oriented learner may become bored or frustrated when required to go through an entire touching-doing process.	Children are made aware of their instructional objectives, provided with alternative resources through which to learn, and are then permitted to select the way(s) in which they will complete the learning process. Students are eventually trained to select goals and methods with appropriate support and guidance from teachers.

Teacher Supplement 2

Fallacy		*Reality*	*Individualization Alternatives*
10.	The teacher should be accountable for a student's learning.	The student should be *equally* as accountable for his/her learning.	Teachers are required to diagnose accurately, prescribe appropriately, and guide students through varied, effective instructional techniques. Youngsters are apprised of both their options and their responsibilities. Learners who do not meet their responsibilities are cautioned, aided, or reassigned into a more structured program.
11.	A "great" teacher must be an excellent actor or actress.	A great teacher establishes rapport, respect, and a climate that creates an eased, personalized joy of learning and achieving for each of his students. Because many students do not learn unless they are actively involved in the process, the dramatic teacher may be amusing but is not necessarily an effective instructor for most learners.	Students are permitted extensive and frequent opportunities to be involved directly with their teachers. The quiet, undramatic teacher may be as effective, or more so than his/her counterpart, depending on the personality ranges of his/her students and the degree of rapport, caring, aiding, self-achievement, and desire to learn that are evident.
12.	Young children need a "mother substitute" and therefore the self-contained classroom, where one teacher is responsible for most of the instruction, is the best organizational pattern for primary grades.	Young and older children need a variety of challenging activities, many warm and responsive adults, other positive children, loving parents, and opportunities to become independent and responsible.	Children are exposed to a variety of adults and relate beautifully when the adults are responsive, caring, and effective in their assigned roles.
13.	Each teacher knows what is "best" for the children in his/her class.	Every teacher is not like every other teacher; some are excellent diagnosticians, some are effective prescribers, some are outstanding guides in the learning process, and some are excellent at all or none of these functions.	Children are being granted an increasingly larger role in determining some, many, or all of their objectives in conjunction with their teachers. The more involvement the student gains, the more likely he/she is to be a motivated learner.
14.	Students learn best through repeated, sequential periods that are spaced throughout the school day (week) (year) and are "articulated" with the same (or other) subject(s) in succeeding days and years.	Students learn in a variety of both structured and unstructured ways.	Students are repeatedly diagnosed to avoid unnecessary (and boring) repetition and are provided alternative schedules and patterns of learning.
15.	Education occurs between 8:30 a.m. and 3:00 p.m. when students are in school.	Learning occurs whenever students are actively involved in stimulating experiences on their level of comprehension and interest.	Students are provided multiple options, multiple environments, and the freedom of scheduling themselves so that learning becomes more self-selective to varying degrees for different students.

Developing Teaching/Learning Strategies

Teacher Supplement 3—Critique the Directions of a Student in Applying Problem-Solving Techniques

Name ____

Directions: The following steps involve role-playing with a peer.

(Check when completed)

______ Step 1: Ask one of your peers to assist you in this learning experience. This peer will serve two functions: (1) he/she will role-play the student whom you are directing in applying problem-solving techniques, and (2) he/she will evaluate your performance. To help this peer develop his/her role, have the peer read through the 11 questions on the job selection sheet which follows and think through how he/she would answer each question. The questions are designed to help the peer think about his/her real feelings concerning the important considerations in selecting a job.

Job Selection Sheet

1. Which is more important to you, job satisfaction or financial reward?
2. Would you give up evenings and weekends to get ahead in your job?
3. Are you a "team player" or a "loner"?
4. If your job required it, would you move to a city far away from your home town?
5. Do you react well to fierce competition, or does it make you uncomfortable?
6. Would you like to own your own business? Be your own boss?
7. Which would you prefer: a 9 a.m.-5 p.m. "time-clock" sort of job, or one that leaves the responsibility for completing work (whatever your hours) up to you?
8. Which do you prefer: city living, or small-town life?
9. Do you need a pleasant, attractive work environment in order to work efficiently?
10. How do you react to heavy pressure? Deadlines?
11. Are you willing to put off financial reward (work your way up), or do you expect immediate returns?

Teacher Supplement 3

______ Step 2: Ask your peer to assume that he/she is involved in the following problem situation. Guide the peer in identifying and defining the problem to be solved, determining the factors, gathering or identifying the information needed to solve the problem, examining possible solutions, selecting a tentative solution, and mentally evaluating the proposed solution.

Note: Some relevant information may be missing. If so, you will need to help the peer determine what other facts are needed and how these facts can be located.

Problem Situation

You have just received your diploma and have been offered two jobs: one in your small home town, and one in a large city 500 miles away.

The job in the city pays twice as much as the job in your home town, and the opportunities for advancement and raises are quite good. One reason the rewards are so great is that the pressures and responsibilities for self-motivation in completing work are heavy.

If you make good (you'll be competing against several other people, all of whom were picked for their skill and initiative), you'll probably be put in a supervisory position in a year or so, and how far you advance will depend on you. The personnel manager has told you that they are looking for someone who works well with other people; cooperation is necessary if the job is to get done right.

During your interview, you overheard several employees talking about putting in another long night to get some work out; one said he thought he'd have to come in on Saturday to meet the deadline.

The work surroundings look quite comfortable. Since there are no windows, the noise from the heavy city traffic and the smoke from the nearby factories won't be a problem.

The job in your home town has a much smaller salary, and raises (if any) will depend on how business is in a given year. However, the employer has been good friends with your family for years and has no family of his own. He would probably give you the option to buy the business in 10 or 15 years if you have the money and desire to do so. Therefore, your future has real possibilities if you decide to accept this job.

Nobody works past 6 p.m. at this job; working on weekends is practically unheard of. The employees are highly individualistic and value their privacy. Their lives away from the office are more important to them than their working lives, and their jobs depend more on seasonal fluctuations than on their ability to outperform someone else. Therefore, competition is minimal. The easy pace of the job reflects the lifestyle of the community; the sidewalks are rolled up at 9 p.m.

Teacher Supplement 3

______ Step 3: Complete the problem-solving checklist (self-evaluation and by your peer).

Note: The checklist may be given to your peer before directing him/her in the role-play situation in order to ensure that he/she knows what to look for in the role play. However, indicate that during the role-play, attention is to be directed toward you and that the checklist is to be completed after the role play is finished.

Teacher Supplement 3

Problem-Solving Checklist (Self-Evaluation)

Directions: Check "Yes" if criteria was met, "No" if it was not.

Under my guidance and direction, you were able to:	**Yes**	**No**
1. Clearly identify and define the problem	☐	☐
2. Identify all major factors involved in the problem	☐	☐
3. Locate sources from which to gather the needed information	☐	☐
4. Gather the needed information	☐	☐
5. Determine what additional information was needed	☐	☐
6. Identify possible solutions	☐	☐
7. Evaluate each possible solution	☐	☐
8. Select a tentative solution	☐	☐
9. Mentally evaluate the tentative solution	☐	☐
My directions were sufficiently clear that you would be able to:		
10. Use these same problem-solving steps to solve future problems you might encounter	☐	☐

Comments: ______________________________

____

____

Teacher Supplement 3

Problem-Solving Checklist (Peer)

Directions: Check "Yes" if criteria was met, "No" if it was not.

Under the instructor's guidance and direction, you were able to:	**Yes**	**No**
1. Clearly identify and define the problem	☐	☐
2. Identify all major factors involved in the problem	☐	☐
3. Locate sources from which to gather the needed information	☐	☐
4. Gather the needed information	☐	☐
5. Determine what additional information was needed	☐	☐
6. Identify possible solutions	☐	☐
7. Evaluate each possible solution	☐	☐
8. Select a tentative solution	☐	☐
9. Mentally evaluate the tentative solution	☐	☐

The instructor's directions were sufficiently clear that you would be able to:

10. Use these same problem-solving steps to solve future problems you might encounter	☐	☐

Comments: ______________________________

____

____

You've Got to Reach'em to Teach'em

Developing Teaching/Learning Strategies

Information Sheet

1. **Terms and definitions**

   a. **Basic skills** — The academic and occupational competencies (workplace skills) needed to function in a technologically advanced society

   b. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

   c. **Individualized instruction** — Student-centered instruction in which the materials and activities are tailored to meet the needs of the individual student

   d. **Learning** — A change in a student's behavior due to an educational experience

   e. **Learning style** — Most efficient and effective method of learning for an individual

   f. **Performance objective** — A statement of what the student must do in observable and measurable terms

   g. **Self-paced instruction** — Process in which the student progresses at his/her rate toward stated objectives

   h. **Student (learner)** — One who receives instruction

2. **Teacher characteristics that support quality learning**

   Note: The success of a school session is based upon a positive classroom atmosphere that promotes learning. To establish this atmosphere the teacher must be the model for taking risks. It is the responsibility of the teacher to provide an atmosphere where students feel psychologically safe and secure as they learn.

   a. Communicates to students the type of behavior expected

      Note: The teacher can initiate a positive climate among classroom members and promote the acceptance of rejected students and new class members.

   b. Knows when to exercise authority, when to involve students in the decision-making process, and when to stand back and allow students to learn by doing

      Note: The goal of self-discipline.

Information Sheet

c. Shows trust by sharing responsibility

Note: The teacher must be genuine and allow the student to know that. Acceptance and respect for the student guarantees a high degree of learning, while promoting the belief that the student is trustworthy.

d. Understands behavior from the student's point of view

Note: Empathic understanding is non-judgmental and non-evaluative.

e. Has a student-centered curriculum

Note: Lessons will be well-planned and interesting. There will be a multimedia approach. The teacher is primarily concerned with each student's needs.

f. Is mentally alert and prepared

Note: It is helpful to have mental organization, not just physical, in lesson plans. The successful teacher will know the purpose and the direction of the material being taught.

g. Accepts the students unconditionally and views the students as persons of worth

Note: It is important that the teacher identify the behavior that is not acceptable, and keep it separate from the value or worth of the student.

3. **Strategies for meeting individual learning styles**

Note: The overall goal of instruction is to meet individual learner needs and to provide for individual differences.

a. Give student credit for what he/she already knows.

Note: Build instruction on prior learning.

b. Identify what student needs to know and/or do.

Example: Student's occupational goal

c. Give student options for learning.

Examples: Independent study, large groups, small groups, audio-visual

d. Allow student to proceed at his/her own rate within program guidelines.

e. Make student accept more responsibility for his/her own learning.

Information Sheet

f. Allow student to evaluate his/her own progress.

Note: Criteria has been established at the beginning.

g. Allow student to move freely in classroom and laboratory.

h. Provide competency-based curriculum which requires demonstrating mastery learning at the designated competency level.

i. Evaluate student on his/her achievement of standards or criteria for each segment of the curriculum.

j. Course or program length depends upon time required for a student to demonstrate competencies.

4. Concepts of individualized instruction

a. Needs, abilities, and interests of individual students become one of the prime focal points around which the instructional program centers.

b. Students are encouraged to become more active, involved, and responsible for their own instruction.

c. Teacher becomes less a presenter of lectures and demonstrations, and more a learning manager and guide.

d. Learning objectives are clearly stated in performance terms.

e. Varied alternative and optional learning experiences are available to meet the stated objectives.

f. Strategies or methods of instruction are designed to reach students as individuals.

g. A variety of media and instructional resources are employed.

h. Learning environment is designed for flexibility and variety.

i. Students are evaluated in terms of individual performance and not by comparison with others.

Information Sheet

5. **Guidelines to consider in selecting strategies for individualizing instruction**

    a. Unit is planned with the thought that all students can achieve the expected level of performance.

    b. Instruction includes a variety of instructional strategies.

    Example: Poor readers should be provided with multimedia materials

    c. Unit contains only a very few overall objectives.

    d. Instructional objectives are established in advance of instruction.

    Note: Students should know precisely what they are expected to achieve and exactly what level of attainment they will be expected to attain.

    e. Unit provides some means for students to check their own progress.

    f. Unit is designed to lead to student mastery of that particular segment of instruction.

    g. An evaluation device is included so that the teacher and student can determine the student's readiness to go on to the next learning experience.

    h. Student grades are based on what the student has or has not learned.

    Note: Grades should not be given on the basis of how well or how fast the student has learned compared to others in the class.

6. **Strategies for motivating students**

    a. Identify importance of learning to student.

    Examples: Future benefits; definite purpose stated for each unit; need for learner effort (must know, should know)

    b. Use competition and cooperation.

    Examples: Individual; group; student organizations

    c. Know progress constantly.

    Examples: Progress check; compete against standards; use of pre-test and post-test

Information Sheet

d. Praise and reward.

Examples: Create win-win situations; recognize accomplishments/ improvements

e. Use curiosity, realism, surprise, and variety.

Examples: Human nature; create excitement

f. Keep class as active as possible.

Examples: Projects and activities; try to always have something new going; always assign productive work

g. Be aware of class morale.

7. **Teaching strategies to increase time on task**

Note: These strategies are recommendations from a time on task research project completed in 1984 by NCRVE.

a. Treat time as an important resource.

b. Define individual and class goals clearly.

c. Plan and organize class activities in advance.

d. Use a wider range of teaching methods

e. Have positive expectations of students and reinforce them in a positive manner.

f. Encourage students to work independently.

g. Assign meaningful tasks.

h. Minimize scheduled whole-class breaks.

Note: This is most applicable to two or three hour classes. Researchers observed students were off-task approximately 25 minutes for a 15 minute scheduled break.

i. Decrease opportunities for interruptions from outside classroom.

Examples: Telephone calls, salespeople

j. Serve as a role model for the world of work.

Information Sheet

8. Techniques for instructional delivery

Note: Instructional techniques are only effective with thorough understanding of subject matter and technical content. Any combination of these methods and/or additional methods could be used in developing a lesson plan. Background of class, individual teaching/learning styles, physical facilities and availability of resource materials, influence choice and selection of instructional methods.

a. **Audio/visual presentation** — Use of a set sequence of still or motion pictures, a recording of voices or sounds, or a combination of both

Examples: Films, filmstrips, video tapes, bulletin boards, posters, mobiles, sound page, actual objects, transparencies

b. **Brainstorming** — Discussion that concentrates on developing a large number of ideas without weighing their merit

c. **Buzz session** — Small group discussion (3 to 8 students) in which students plan activities or react to large group discussions or assignments

d. **Committee** — Small group designed to complete one or more clearly defined tasks.

e. **Consumer project** — Passive observation on the part of a student of displays or activities to increase understanding or appreciation.

f. **Computer software** — Use of hardware and software programs to facilitate the learning process

Examples: CADD, interactive video

g. **Cooperative learning** — Structured group experience for two to six students who have a specific task to complete and is used for guided practices of tasks to do, for problem solving and higher order thinking skills, and for tasks that are more creative or review oriented

h. **Debate** — Structured discussion of a question or issue involving the presentation of opposing opinions

i. **Discussion** — Supervised conversation in which students share their ideas with others

j. **Exercise** — Practice in performing cognitive or psychomotor activities under conditions which only approximate the full task

k. **Experiment** — Student performance of a set of actions to verify principles or hypotheses or to collect data in order to examine such principles or hypotheses

Information Sheet

l. **Field trip** — Visit by a group of students to places outside the classroom for the purpose of firsthand observation

m. **Formal lecture** — Oral exposition of facts, principles, procedures, feelings, or directions by teacher

n. **Gaming** — Use of games to stimulate thinking or as a structure for asking questions

o. **Guest lecture** — Formal or informal lecture given by someone other than teacher

p. **Guided practice** — Application of learning in which teacher is involved

q. **Independent practice** — Application of learning in which teacher is not involved

r. **Informal lecture** — Similar to formal lecture but allows comments and questions by students

s. **Interviewing** — Acquiring information or opinions from specialists through the use of probing questions

t. **Manipulative skill demonstration** — Showing the step-by-step procedure required to complete a task

u. **Model presentation** — Use of a replica or three-dimensional representation of an actual object or device

v. **Physical principle demonstration** — Illustrating how scientific laws or other principles work

w. **Problem-solving project** — Attempt by student to develop a solution or plan of action when faced with a problem or complicated task

x. **Producer project** — Creative effort on part of student to produce a design or product consistent with concepts or principles being studied

y. **Questioning** — Asking students questions to assess levels of learning or to encourage discussion or speculation

z. **Role-playing** — Examination of human interaction by observing or experiencing realistic, spontaneous behavior in an imaginary situation

aa. **Seminar** — Structured presentation by several individuals (student participates as an observer or presenter)

bb. **Specific skill development project** — Practice in performing cognitive or psychomotor activities to improve student abilities

Information Sheet

9. Steps in the problem-solving approach

a. State and define the problem.

- Three methods of identifying problems for class to use include:
  - — Problem can be brought up by the individual student who is experiencing the problem
  - — Teacher can present a general problem area and then draw out the specific problem from the class by asking students to relate experiences they have had with problems in that area
  - — Teacher can present a written oral case study problem that will require students to solve a problem in the area being studied
- Problem statement should be descriptive of the difficulties to be overcome and should include such information as (1) who or what is affected by the problem, (2) what conditions are causing the problem, and (3) what the goals are.

b. Identify all major factors involved in the problem.

- Use of questions to elicit a list of factors

  Note: These questions should require the students to defend their statements and should stimulate interaction among the students, as well as between the students and teacher.

- Determine which of factors is most critical and why.

c. Gather needed information.

- Questions of study

  Note: Each question of study should focus upon a specific bit of information needed in solving the problem.

- Sources of information

  Examples: Classroom resources, community resources, technical resources

d. Determine possible solutions.

Information Sheet

e. Evaluate each possible solution.

Note: Teacher must guide and lead discussion so that it does not turn into an argument among students in the group. Many times, the appropriate solution may vary according to individual needs.

f. Select best possible solution.

g. Evaluate the solution.

Note: The situation is evaluated through discussion or by consulting authorities until a final conclusion is reached.

- Try out the solution
- Mentally test solution

h. Assess the results.

10. Teaching goals for reinforcing basic skills

a. Emphasize basic skills when assessing and evaluating students.

b. Reinforce the relationship between academic and vocational and/or applied skills.

c. Emphasize importance of mastery of basic skills for continued learning on the job.

d. Teach students how to think for a living.

11. Seven essential workplace basic skills

Note: These workplace basic skills have been identified from a project by the American Society for Training and Development (ASTD) and the U.S. Department of Labor.

a. Employers want employees who possess sound basic academic skills.

b. Employers want employees who know how to learn.

c. Employers want employees who can listen and communicate orally.

d. Employers want employees who possess adaptability—the ability to solve problems and think creatively.

Information Sheet

e. Employers want employees who have solid personal and career development skills.

f. Employers want employees who can function effectively on a team.

g. Employers want employees who motivate themselves and others.

12. Four stages for successful teaching-learning process

a. Preparation stage

Examples: Review the objectives and unit content; read suggested activities; plan teaching strategies; select student materials

b. Delivery (presentation) stage

Examples: Implement plans for motivation; use teaching strategies; disseminate materials; guided practice

c. Application stage

Examples: Students participate in learning activities and complete job and assignment sheets; independent practice

d. Evaluation stage

Examples: Students take test and demonstrate motor skills; teacher reteaches if and where necessary; competency is documented

13. Strategies that must be done with instructional materials

a. **Localize** — Make instructional materials relevant to community and workplace

b. **Individualize** — Make instructional materials relevant to individual

c. **Supplement** — Provide additional information or resources

d. **Motivate** — Stimulate the need or desire to act

Information Sheet

14. **Ways to localize and individualize instructional materials**

    a. Localizing

    - Apply units to needs of community

      Examples: Field trips, resource people, home visits, coordination visits, supervised farm visits

    - Use advisory committee

    b. Individualizing

    - Relate to students' objectives
    - Assess students' learning styles
    - Include students in planning

15. **Factors to consider when developing a lesson plan**

    a. Determine the lesson objective.

    Note: What should the student be able to do when she/he completes the unit?

    b. Determine instructional material needs.

    Examples: Teacher's guide, student materials, references, supplemental materials, tools, and equipment

    c. Determine motivational strategies.

    Examples: Preparation of student; interest approach; student learning style

    d. Localize and individualize each assignment and/or job sheet for your teaching situation.

    Note: Consider physical facilities, tools and equipment available, and budget.

    e. Determine individualized assignments.

    - Informational
    - Performance

      Note: Are LAPs needed?

Information Sheet

f. Determine strategies for reinforcing basic skills.

g. Develop presentation outline.

- Mark the suggestions that you can use from the suggested activities page.
- Write key words for lecture and discussion and additional examples (for localizing) on information sheet.
- Determine instructional methods for all objectives.

h. Determine lesson summary and review items to be used to evaluate the lesson against the lesson objective.

i. Determine strategy for administering tests.

- Are you going to pretest?
- How are you going to use pretest results?
- Do you have an established grading pattern?

j. Indicate approximate length of time needed to teach the following:

- Unit of instruction
- Each objective

Developing Teaching/Learning Strategies

Student Supplement 1—Self Evaluation

Name ______________________________

Ask yourself the questions below to find out how you rate in classroom management. If you feel improvement might be beneficial, this unit may be of assistance to you.

Do I Practice Good Classroom Management Strategies?	Seldom	Sometimes	Usually
1. Do I read yawning mouths and out-the-window stares as signals to change the pace?	______	______	______
2. Am I skilled at attending to two or more matters at one time?	______	______	______
3. Are my students aware that I am perceptive of behavior in all sectors of my classroom?	______	______	______
4. Do I reinforce behaviors I wish to have repeated?	______	______	______
5. Do I have the capacity to make professional decisions confidently and rationally?	______	______	______
6. Can I tolerate those normal, but sometimes irritating, student behaviors documented as typical of the age group I am teaching?	______	______	______
7. In view of the contemporary emphasis on the rights of free expression and due process, am I sufficiently informed in school law to rely more heavily on preventive rather than coercive alternatives when dealing with deviant student behavior?	______	______	______
8. Is my punishment for deviant behavior legal, prompt, appropriate, impersonal, and private?	______	______	______
9. Am I aware that as a classroom teacher I cannot be expected to solve single-handedly the social problems of the community that spill from the streets into the classroom?	______	______	______

Student Supplement 1

What is the Climate of My Classroom?	Seldom	Sometimes	Usually
10. Do I encourage students to try something new and to join in new activities?	______	______	______
11. Do I teach in a manner that is exciting and interesting?	______	______	______
12. Do I learn the name of each student quickly and do I use that name often?	______	______	______
13. Do I arrange time to permit a quiet talk with each student?	______	______	______
14. Do I notice and comment favorably on the things that are important to the students?	______	______	______
15. Do I avoid having "favorites" and "victims?"	______	______	______
16. Do I have, and do my students have, a clear idea of what is and what is not acceptable in my class?	______	______	______
17. Within my limits, is there room for students to be active and natural?	______	______	______
18. Am I adequately prepared for class each day?	______	______	______
19. Do I permit my students to make mistakes without penalty?	______	______	______
Are My Disciplinary Techniques Adequate?			
20. Do I keep my students alert and accountable?	______	______	______
21. Do I switch to new teaching approaches when the old ones do not work?	______	______	______
22. Am I able to help students laugh off their tensions when appropriate?	______	______	______
23. Do I help misbehaving students understand the probable results of their actions?	______	______	______
24. Are my control techniques task-centered rather than teacher-centered?	______	______	______
25. Do I punish my students consistently for breaking the rules?	______	______	______
26. Does the deviant student clearly know what he/she has done wrong when disciplinary action is taken?	______	______	______
27. Do I help my students to know and understand the principles of developing self-control?	______	______	______
28. Do I punish students as their deviances begin to emerge rather than after the misbehavior?	______	______	______

Developing Teaching/Learning Strategies

Student Supplement 2—Teaching to a Student's Learning Strengths

How Can I Teach to a Student's Learning Strengths?

Auditory Learners:

- 30 percent of all students have auditory strengths
- 43 percent of dropouts have fair to poor auditory strengths

Characteristics of Auditory Learners

These students may know dozens of jingles and commercials from radio and television. They like to talk, but can be inattentive to visual tasks such as worksheets.

In early years, their writing tends to include inversions, reversals, omissions, and letters formed incorrectly. Auditory learners can be poor spellers. Math errors may show consistent patterns, such as inattention to signs, confusion, or reversals of numerals.

They do well when taught to read using a phonics rather than sight word approach. Often, to keep visual place, they may point when reading and can confuse similar words such as "bought" and "brought."

Teaching Strategies

These students learn by hearing and speaking—lecture, group discussion, tape recordings, radio, records, television, panel discussions, and oral reports. They do well with oral directions.

Jingles, catchy stories, mnemonic devices or songs are good learning aids. Allowing the student to spell or recite words or information onto a cassette tape will help. Use a phonetic approach to reading and spelling.

Visual Learners:

- 40 percent of all students have visual strengths
- 53 percent of dropouts have fair to poor visual strengths

Characteristics of Visual Learners

These students may ignore verbal directions; questions and directions must often be repeated. Typically they watch others when directions are given, and then follow what they do. They can have trouble with phonics and may have a limited vocabulary with poor articulation. They often answer with one word or an incomplete sentence, and may substitute gestures for words.

Student Supplement 2

Teaching Strategies for Visual Learners

Visual learners need to see what they are to learn; they must be shown rather than told what to do. They do better with written rather than oral directions. Visual aids are helpful—overhead projectors, books, magazines, slides, films, panel boards, bulletin boards, posters, flashcards, charts, maps, field trips.

Teach the student to visualize, to see words, problems, and images in his mind. Visual images increase sequential memory, such as acronyms which lend themselves to vivid mental pictures. Use the chalkboard, written assignment sheets, worksheets with visual aids, color highlighting of text and study sheets. Good educational software for computer assisted instruction is especially helpful. These students can be easily distracted visually. If there is a problem, experiment by seating them in study carrels or facing away from bulletin boards. Include the sight word approach in teaching reading. Model the skill being taught.

Tactile/Kinesthetic Learners:

- 15 percent of all students have tactile/kinesthetic strengths
- 88 percent of dropouts have strong tactile abilities
- 99 percent have strong kinesthetic abilities

Characteristics of tactile/kinesthetic students

These students are touchers—they will rub their hands along the wall, knock on lockers, brush door jams. They are typically well-coordinated and enjoy taking things apart and putting them back together again. Often such students seem to be in constant motion.

They can have trouble learning abstract concepts, counting by rote or sequencing materials without concrete objects as learning aids.

Teaching strategies for tactile/kinesthetic students

Provide as many tactile/kinesthetic materials as possible. This student needs to feel things to learn. It helps if he/she can trace things on his/her hands—images projected on the wall, numbers and letters cut from sandpaper, finger-writing in trays of sand or shaving cream. Make raised letters and numbers by writing with white liquid glue and allowing it to dry.

Use methods such as Chisanbop, TouchMatch, or "air" writing. Involve student as active participant in learning experience—typing, taking notes, role playing, constructing models, creating bulletin boards. Computer assisted instruction is an especially effective visual/tactile tool for the TK learner.

Teachers should be sensitive to the student's need to move. When possible, allow student to move around the room as part of the learning experience. Try cutting a long worksheet into smaller segments and give the student one piece at a time. As each strip is completed, he/she can hand it in and pick up the next piece.

Reprinted with permission of The Center for Successful Learning, 4949 Westgrove #180, Dallas, Texas 75248, 214/407-9277.

Developing Teaching/Learning Strategies

Student Supplement 3—Research on the Human Brain and Learning

Hemisphericity—Why Teachers Must Learn to Teach Globally

Left-brain, Right-brain

Most educators are aware of research on the human brain and learning. We are familiar with terms "left brain" and "right brain" as they describe the preference patterns relating to the left or right hemisphere of the brain.

"Lefts"—operate logically, excel in language-centered activity, and think from the part to the whole, approaching tasks sequentially, in a step-by-step fashion.

"Rights"—think globally, starting from the "big picture" before addressing the parts, and show strengths in visual/spatial experiences.

We all use both sides of our brain.

Humans have only one brain and all of us use both sides of our brain. When a human considers a possible course of action, the left hemisphere contributes all the logical and verbal aspects of the decision-making process, while the right hemisphere expresses emotions.

While the balance of brain activity changes with the requirements of the tasks that face us, most activity can be done with several different strategies. Thus, "style" preferences emerge.

Researchers believe hemispheric cognitive style—whether a person's mind most naturally uses the left or right hemisphere—depends on both genetics and the effect that the environment has on what we inherit physically.

What is research teaching us?

Neither gender nor right- or left-handedness is related to hemispheric cognitive style.

"Rights" and "lefts" are equally creative, but their creativity develops in opposite ways. Rights create holistically, "seeing" the entire picture at once, then working through details. Lefts develop the end product step-by-step, in an ordered pattern.

Rights and lefts are equally verbal, but because rights think holistically, they tend to express themselves in overall summaries. Lefts focus on one point at a time in relative detail.

Although good readers can have either a right or left style, about 85 percent of poor readers have a right style. (Zenhausern & Oexie, 1980) Why is this? Are left preferenced processors smarter than rights? Or is the structure of schools, and the methods of teaching reading geared for the left-processing child?

Student Supplement 3

Traditional Instruction and Hemispheric Preference

How compatible is traditional instruction to the learning needs of all students? Research reveals important information.

Few teachers would have trouble describing traditional instruction:

Quiet formal learning environment
Students learn alone
Low/no mobility
Teacher dominant
Whole group instruction
Textbook/lecture format
Learning by looking/listening
Heavy paper/pencil emphasis

Is this a correct environment for all student? The following is a correlation between learning style factors and hemispheric preference patterns (Dunn, 1982):

Left brain behaviors respond to —

- Quiet while learning
- Bright light while learning
- Formal design while learning
- Academically motivated/persistent
- Auditory, visual, tactile channels

Right brain behaviors respond to —

- Sound while learning
- Soft, dim light while learning
- Informal design while learning
- Learning with peers
- Less academically motivated/persistent
- Tactile, visual channels

What do you see?

Clearly, student whose learning styles are matched to traditional instruction are left hemispheric preferenced. This means, in traditional classrooms, the right processor can be handicapped by the mismatch between his/her natural approach to learning and the environment and structure of the classroom. Good teaching will accommodate the learning needs of all students.

Dunn, R. et. al. Hemispheric Preference: The Newest Element of Learning Style. *The American Biology Teacher.* May 1982, 44, 5, 292-294.

Reprinted with permission of The Center for Successful Learning, 4949 Westgrove #180, Dallas, Texas 75248, 214/407-9277.

Developing Teaching/Learning Strategies

Student Supplement 4—Strategies for Teaching Right-Brain, Global Thinkers

How Can Teachers Meet the Needs of Their "Right-Brained" Students?

What can teachers add to traditional instruction to accommodate the needs of right hemispheric preferenced students?

These recommendations come from Dr. T. Y. Harp and staff at Corsicana High School, Corsicana, Texas. In 1988 they designed a successful intervention for 27 students who had failed their Texas exit exam three times. Using the following techniques, despite a history of poor performance and failure, all 27 were able to pass their exit exam and graduate with their class.

How to Teach Right-Brained, Global Thinkers

1. Make your lessons "real"—tell a story, joke, anecdote. Reach for the emotional link that can motivate and focus global learners. Exaggerate and enjoy the absurd.

2. Use visuals such as films, pictures, transparencies, etc. They support spatial strengths and add a multi-sensory dimension to learning.

3. Present overviews to lessons and units; stress main idea. Begin with "big picture" then attend to details.

4. Adapt a "living curriculum"—use newspapers, magazines, articles, television programs, news. These demonstrate relevancy of school subjects to the real world.

5. Use tactile materials—globals enjoy material that can be manipulated. Globals tend to be TK learners and need hands-on in order to "come alive" to learning.

6. Many globals enjoy kinesthetic activities such as role playing, field trips, lab experiments, etc. Mobility and relevancy are supported by such experiences.

7. Use poetry, myths, fantasies. Globals respond to the imagination and emotionality in such genre.

8. Teach students to read with sensitivity to perceptual strengths and brain processing preference (see work of Dr. Marie Carbo including *Teaching Students to Read Through Their Individual Learning Styles*, Carbo and Dunn, Reston Publishing Co., 1986).

9. Use open-ended questions and assignments. These support imagination and higher-order thinking.

10. Globals respond to colors and cartoons. Attention to such spatial "pictures" greatly supports retention.

Student Supplement 4

11. Globals do not like to memorize long passages. Help them by teaching them to use devices to make such activity acceptable and give them alternatives in projects that allow choices across various perceptual strengths.

12. Teach in story form. This is an important technique for motivation and retention.

13. Avoid too many facts or at least, don't overstress them. Lefts love them — rights just wan the "summary."

14. Globals tend to need mobility; provide breaks and short-term assignments. Try brainstorming ways to accommodate this factor in the classroom.

15. Globals are usually not persistent; provide short assignments/give assignments in shorter segments. No reason to do 20 math problems for independent practice, when you can check understanding in five.

16. Globals may enjoy working at the blackboard. Experiment by using it for problem solving, to take tests, or explain science projects. Why? They must move to get there; they use larger muscles to write on the board.

17. Experiment with use of a flashlight to form letters or write words on the ceiling, walls or blackboard. They are involved, hands-on, in active learning which matches visual/spatial strengths.

18. Use small group/cooperative learning techniques such as team learning, circle of knowledge, role playing, brainstorming. Learn about Cooperative Learning as a powerful tool for global learners.

19. Accommodate for informal room design needs, low light, and sound in the learning environment. This is easier than you think. Ask students for suggestions.

Remember by adding these techniques to your "bag of tricks" you are accommodating students' strengths in learning and supporting improvement in students' attitudes, behaviors and grades. Style matches are natural strengths—even if you practiced, could you ever write as well with you right hand, if you were left preferenced? That's really what the issue of style is all about. And, for many students, it is the key to motivation and mastery.

Reprinted with permission of The Center for Successful Learning, 4949 Westgrove #180, Dallas, Texas 75248, 214/407-9277.

Developing Teaching/Learning Strategies

Student Supplement 5—Intervention Checklist

Name ______________________________________

Listed below is a selection of forty instructional techniques. From the list, check those techniques which you have used within the last month. Please add any techniques you use which are not included.

______ Provide study guides.

______ Use peer tutoring.

______ Establish a consistent classroom routine.

______ Use the buddy system, especially for reading.

______ Use auditory tapes.

______ Provide sequenced practice activities.

______ Pre-teach vocabulary.

______ Clearly define expectations in advance of unit, i.e., objectives, purpose, goals.

______ Base instruction on the readability of textbooks.

______ Use "hands-on" materials and equipment and the inquiry method.

______ Use visual aids such as charts, graphs, photos, flash cards, etc.

______ Use psychomotor breaks.

______ Break content into "teachable" segments.

______ Group students by ability.

______ Provide student with frequent feedback.

______ Frequently review, summarize and recap concepts and skills taught.

______ Determine and teach to student's learning modality.

______ Require less production to master the concept.

______ Allow alternative responses by students to indicate mastery.

Student Supplement 5

______ Preview plot of films and filmstrips before showing.

______ Use graph paper.

______ Use progress charts.

______ Have student repeat directions to ensure understanding.

______ Allow cursive writing or printing.

______ Provide an outline for students in reading assignments.

______ Send student on an errand when blow-up is likely.

______ Use performance contracts geared to individual ability and interest.

______ Underline key words.

______ Use colored strips of paper as a place marker in reading.

______ Give options for assignments. Allow students to choose type of format they prefer such as an oral report, written report, displays, charts, etc.

______ Give student an oral test.

______ Have student prepare mini-lessons for younger children.

______ Use flash cards for vocabulary development.

______ Allow student to tape your lecture.

______ Provide student with dittoed lecture notes.

______ Use academic teaching games.

______ Hand out types or printed worksheets and tests.

______ Accentuate the positive. Write number of correct rather than number of wrong on paper.

Student Supplement 5

Other techniques you use:

____

____

____

____

____

30 or more techniques — Excellent. You are using a wide variety of techniques.

20-29 — Good. Are there some new techniques you want to try?

19 or less — Try harder. Look for more variety in your teaching techniques.

Developing Teaching/Learning Strategies

Student Supplement 6—Teaching Strategies

Name ____

Strategy 1: Games

a. Benefits of games in the classroom

- Provides a means of enrichment for students
- Provides motivation for the academically disenchanted
- Gives students the experience of success
- Serves as an educational and a social leveler in the classroom
- Provides a welcome change of pace for students

b. Ways to control learning through the use of games

- Design games yourself and program in the learning.
- Know exactly what the specific objective that students are to achieve.

c. Steps in designing your own games

- Determine the object of the game.

  Example: What does it take to win the game

- Set the rules.

  Note: Make the rules simple and easy to follow.

- Collect the game components.

  Examples: Boards, cards, dice or spinners, pawn or tokens, play money, etc.

- Plan how to get the most educational mileage from the game.

  Note: Plan for debriefing sessions and break points for discussions

- Test your game.

  Note: Try it out at home and "iron out" the problem spots.

Student Supplement 6

d. Types of games

- Action games

  Examples: Charades or Treasure Hunt, or convert Simon-Says rules to "Values Are" or "Goals Are"

- Bingo-type games

  Note: Use standard Bingo set as a guide and use about 75 questions of the completion, matching, or definitions.

- Board games

  Note: Almost any game that is played on a large common board can be adapted to educational use by altering the board slightly and converting the drawing cards questions to the subject matter you want to teach.

- Card games

  Examples: Rummy, Match, Old Maid, etc.

- Drama and role-play

  — Use in class where students are fairly well-acquainted and comfortable with one another.
  — Select a situation to enact what is relevant to your students' needs.
  — Know specifically what your teaching objectives are for the role-play.
  — Jot down a brief outline of the situation.

e. Choosing your game to suit your needs

Educational Objectives	Appropriate Game Forms
Change of pace from mental work Outlet for pent-up energy Act according to rules and procedures	Action games
Evaluate prior learning Test understandings	Bingo-type games TV games

Student Supplement 6

Educational Objectives (continued)	Appropriate Game Forms (continued)
Practice decision-making Encourage problem-solving Understand sequences Think analytically Accept consequences of decisions Develop empathy Cope with chance element of reality Motivate inquiry Fast feedback from decisions Realize how parts affect whole	Board games Simulation games Computer games
Increase work power	Word games
Focus attention Individualize learning of logic and strategy Encourage goal-setting	Puzzles
Clarify values Work out solutions Test theories	Role-play Drama
Recognize and sort information See relationships between concepts	Card games

Strategy 2: Study Techniques

You can present SQ3R to all average and above average readers in the intermediate grades or in secondary school. Although students may find this study technique to be rather time consuming and exacting at first, it can save them much study time and greatly enhance retention after they become accustomed to studying in this way.

a. Here is a brief summary of steps in the SQ3R study technique:

- **Survey.** To survey a chapter, the student skims it for about five minutes to gain a general impression. In such a survey he/she reads the introduction, the summary and the first sentence of each paragraph in the chapter. In addition, he/she can examine very briefly the special features of the chapter such as maps, charts, and graphs. During the survey the student tries to set his/her purposes of reading the chapter.

- **Question.** The student proceeds through the next three steps of this technique one section at a time. The student first reads the initial heading in each chapter and then turns it into a question. He/she then reads the section to answer the question that has been formulated. If he/she wishes, he/she also can formulate several additional questions to read and answer.

Student Supplement 6

- **Read.** The student reads each section to answer the specific question or questions he/she has posed.

- **Recite.** The student states the answers to the question in the sections in his/her own words. He/she also can summarize the important content in each section in his/her own words.

- **Review.** As in the case of the survey, this step applies to the entire chapter. In this step, the student reviews either orally or in writing all of the important content he/she has acquired by reading the chapter. Such a review can consist of the answers to the questions he/she has posed or any other important information he/she has gained from reading the chapter.

b. Activities for the SQ3R study technique

- Survey Component

  — Write the title of the chapter.
  — From the table of contents, write the other chapters in the unit.
  — Write the main idea of each paragraph in the introduction of the chapter.
  — Write one statement contained in the captions of the special features. (Pictures, charts, graphs, diagrams, etc.)
  — Copy topics-subtopics-details. (Use outline form.)
  — List all italicized words or bold print words which are included in the chapter.
  — Write a brief summary of the chapter—3 to 5 sentences. (Student should be able to read the last few paragraphs of the chapter for this information.)

- Question Component

  — Read the questions at the end of the chapter.
  — Read the heading of each section in the chapter and turn it into a question.

  Note: Use who, what, when, where, how, and why to help the student get started.

- Read Component

  — Read the question that has just been made from the headings in the chapter. Read the question, then write an answer to the question. Do all questions in the same manner.
  — Answer the questions at the end of the chapter.

  Note: It would be most helpful to answer these in statement form.

Student Supplement 6

- Recite Component
  - Read all questions and answers. (Orally if possible.)
  - Ask another person to read the questions while the student answers them orally. If this is not possible, have the student cover the answer to the questions, read the question and write the answer.
- Review Component
  - As in the case of the survey, this step applies to the entire chapter. Have the student re-read the survey, the questions and answers he/she has written, and the questions and answers at the end of the chapter.

c. Study guides

Provide a typed, double-spaced study guide for each chapter. Note page number before each question or completion sentence. Underline vocabulary words and terms to be remembered.

Teach a particular concept when necessary by giving a short statement, then ask a question from that statement.

When there is a particular fact or term needed to be remembered for a test, indicate as such. (Remember for test.)

This study guide will be useful to the student as a learning and studying tool.

d. Color coding textbooks

Color code student textbooks for students having difficulty reading the material.

One color coded textbook in the resource room would be helpful as a reference for students in the lab. Use green, pink, and yellow highlighter pens. Highlight vocabulary words and terms in **green**. Highlight definitions in **pink**. Highlight additional information and facts in **yellow**.

Material highlighted could come from the questions to be answered in the back of the chapter or from a study guide from the content area teacher.

Provide a key in the front of the textbook for the student as a reference to color coding.

e. See thru study sheets

- Materials: Water base felt tip markers capable of being screened out by plastic theme covers; plastic theme covers; dark or black magic markers; 3 × 5 inch index cards (generally, yellow or pink water base markers and red theme covers work best).

Student Supplement 6

- Procedure: On index cards, problems or questions are written using the dark magic marker and the water base marker for the answer.

  When cards are under the plastic theme cover only the problem or question is visible, but the answer appears when card is pulled out from under the plastic.

  Students can easily use this to quiz themselves on any type of information, having immediate feedback.

Strategy 3: Questioning Techniques

Note: The questioning techniques that follow are generally applicable to any questioning model and maximize the potential for a meaningful discussion.

a. **Plan key questions to provide lesson structure and direction.** Write them into lesson plans, at least.

b. **Phrase questions clearly and specifically.** Avoid vague or ambiguous questions such as "What did we learn yesterday?" or "What about the heroine of the story?" Ask single questions: avoid run-on questions that lead to student frustration and confusion. Clarity increases probability of accurate responses.

c. **Ask questions logically and sequentially.** Avoid random questions lacking clear focus and intent. Consider students' intellectual ability, prior understanding of content, topic, and lesson objective(s). Asking questions in a planned sequence will enhance student thinking and learning.

d. **Ask questions at a variety of levels.** Use knowledge-level questions to determine basic understanding and to serve as a basis for higher-level thinking. Higher-level questions provide students opportunities to practice higher forms of thought.

e. **Follow up on student responses.** Develop a response repertoire that encourages students to clarify initial responses, lift thoughts to higher levels, and support a point of view or opinion. For example, "Can you restate that?" "Could you clarify that further?" "What are some alternatives?" "How can you defend your position?" Encourage students to clarify, expand, or support initial responses to higher-level questions.

f. **Give students time to think when responding.** Increase wait time after asking a question to three to five seconds to increase number and length of student responses and to encourage higher-level thinking. Insisting upon instantaneous responses significantly decreases the probability of meaningful interaction with and among students. Allow sufficient wait time before repeating or rephrasing questions to ensure student understanding.

Student Supplement 6

g. **Use questions that encourage wide student participation.** Distribute questions to involve the majority of students in learning activities. For example, call on nonvolunteers, using discretion for difficulty level of question. Be alert for reticent students' verbal and nonverbal cues, such as perplexed look or partially raised hand. Encourage student-to-student interaction. Use circular or semicircular seating to create environment conducive to increased student involvement.

h. **Encourage student questions.** This encourages active participation. Student questions at higher cognitive levels stimulate higher levels of though essential for the inquiry approach. Give students opportunities to formulate questions and carry out follow-up investigations of interest. Facilitate group and independent inquiry with a supportive social-emotional climate, using praise and encouragement, accepting and applying student ideas, responding to student feelings, and actively promoting student involvement in all phases of learning.

Reprinted, by permission, from *Caught in the Middle*, copyright 1987, by the California State Department of Education. The complete book is available for $5 (plus sales tax for California residents) from Bureau of Publications Sales, California State Department of Education, P.O. Box 271, Sacramento, CA 95802-0271.

Strategy 4: Developing Thinking Readers Using Literature

To help students become skilled in a variety of reading comprehension levels has long been a goal of educators. It does not come automatically. It takes planning and practice to help students respond not only with factual information of a reading selection, but to respond with the sequence of events, main ideas, and to make inferences, predictions, and evaluations. Listed below are activities which can be used with any story.

a. Generic story guide using higher order thinking skills

- Choose 10 new words from the story; **define** them.
- **Describe** in a paragraph your favorite part of the story.
- Write a questionnaire consisting of five **questions** that you would ask the author of your book.
- **Design** a different book cover.
- **Create** a new ending for the story.
- **Decide** whether you did or did not like the book, and tell why.

After reading any library book or story from a literature book, students can use the above suggestions to guide the development of higher order thinking for more in-depth understanding of any story.

Student Supplement 6

Strategy 5: Innovative Approaches for Teaching Reading in Content Areas

a. Make crossword puzzles using vocabulary words from a given unit. Make up a large supply of 8½" × 11" paper with half-inch squares. Ask the students to make up their own crossword puzzles by crossing words from the current lesson, starting with one word across the center of the paper. You may need to start them off with the first cross. After one or two experiences they should be able to start on their own. Give special recognition to those who have been able to use every word. This activity can be repeated with each new lesson.

b. Write riddles for vocabulary words.

c. Use an extended or starred word as the title of a poem or song. Use other words from the list in the poem or song.

d. Use the dictionary to find other forms of vocabulary words. Learn to use correctly all forms of the word such as: excess, excessive, excessiveness, excessively.

e. Develop a password game using words from a given unit. Play password as a review of word meanings.

f. Develop murals, dioramas, or television commercials to illustrate the meaning of a word or words.

g. SCRAMBLE. On a duplicating master, list the vocabulary words, with letters of each word scrambled. Direct the pupils to put each word in its proper order. To make the activity easier if necessary, supply definitions to aid the unscrambling of the letters in the words, DRE — Unscramble these letters to find a color.

h. WORD-O. Each child will divide his/her paper into 16 equal parts by folding it. Into each space, on one side, he/she will carefully write one new word from the current lesson, making a total of sixteen words. The leader, probably the teacher, collects the papers and redistributes them throughout the room. The leader calls out the words from the list, and the students cover each word on the paper as it is called with disc or cardboard. The first student to cover a line down or across or a diagonal line, as in bingo, is the winner. As soon as the first student has completed the game, the papers are redistributed, ready to begin another game. The leader can give definitions instead of pronouncing the words.

i. DETECTIVE. Write a word on the board from the current lesson, leaving out one or two or more of the letters, depending on the level of the group. Give a definition of the word and call on different students to fill in the missing letters. This may be done orally or in writing. As the class matures, leave out more of the strategic letters and cut down on the definition clues. By giving one point for each correct word, and allowing the students to keep their own scores, you will give everyone more incentive to study the words before the game is played.

Student Supplement 6

j. OPPOSITES. From the vocabulary lists your students have already studied, make a list of words for which there are antonyms, and duplicate the list. The students are to write an "opposite" for each word on the list. Afterwards, all the opposites that have been thought of for each word can be written on the chalkboard for all to see and discuss. Keep dictionaries handy and encourage your pupils to use them for help in finding opposites and checking their spelling. Older groups may be instructed to make their own lists by finding opposites and checking their spelling and by finding opposites for words in the last three weeks' vocabulary lists.

k. VOCABULARY FOOTBALL. This game is played by two teams. On the chalkboard, draw a football field to scale: 100 yards long divided into ten-yard segments. Put a circle representing the ball on the 50 yard line. Each team is given six plays, represented by six vocabulary words, to advance the ball toward the opponents goal line. With each word correctly defined, spelled, etc., the ball advances ten yards. For each word missed, the offensive team loses ten yards. Teams score six points each time they cross the opponents goal line.

l. FIND IT. Each student has a copy of the current words, a pencil, and a sheet of paper. Begin by giving a definition of a word from the list. The students are supposed to find the word and write it on their papers. After each word has been written, pick a student to write the word on the board. The others check their answers against the board. As the group progresses, the students may enjoy giving the definitions themselves.

m. Put the word on the board and have students conduct a word hunt in the text. When a student finds the word he/she raises his/her hand. When called upon, he/she reads the word in context and gives a definition of the word. The teacher then proceeds to build concepts around the word.

n. Sentences from the text can be projected on the overhead. Volunteers read the sentences and define the vocabulary words. The teacher leads a discussion of concepts.

o. With particularly difficult words, ask the entire class to say the word along with you several times. This will give the students an opportunity to hear the word pronounced correctly.

p. Have students construct vocabulary index cards. The word is printed on one side (underlined in a sentence) and the definitions printed on the other. These can be used for short drill sessions at the end of the class period with students working in pairs.

q. Maintain a vocabulary bulletin board section. Encourage students to illustrate the vocabulary word with drawings and display them on the bulletin board.

Developing Teaching/Learning Strategies

Student Supplement 7—MAVCC's Basic Skills

A. The following table of academic and workplace skills has been developed to assist the teacher in identifying those skills being reinforced through the instructional process.

Skill Groups	**Sub Skills**	**Definitions**
Learning Skills	Learning to learn	Developing ability to apply knowledge to other situations; knowing how to learn.
Foundation Skills	Reading	Comprehending written information and analyzing, summarizing, and applying what has been read to a specific task.
	Writing	Communicating a thought, idea or fact in written form in a clear, concise manner.
	Math	Applying computation skills such as reasoning, estimation, and problem solving as they are actually used on the job.
	Science	Applying knowledge learned through study or practice that is based on scientific principles as they relate to specific tasks.
Communication Skills	Listening	Listening for content, conversation, long-term contexts, emotional meaning, and directions.
	Oral communication	Communicating a thought, idea, or fact in spoken form in a clear, concise manner.
Adaptability Skills	Creative thinking	Using imagination to create something new—i.e. an idea, invention, work of art.
	Problem solving (critical thinking)	Recognizing and defining problems, inventing, and implementing solutions, and tracking and evaluating results.
Personal Management Skills	Self-esteem	Developing self-confidence and creating a positive self-image.
	Motivation/goal setting	Setting and meeting defined goals and objectives.
	Personal and career development	Emphasizing self-direction by establishing and implementing a plan.
Group Effectiveness Skills	Interpersonal relations	Developing ability to maintain positive relations with others.
	Negotiation	Resolving conflict between two or more individuals.
	Teamwork	Working together in a group to reach a common goal.
Influence Skills	Organizational effectiveness	Adapting to the organization's goals, values, culture, and traditional modes of operation.
	Leadership	Directing/influencing group in performance of a specific task; accepting responsibility for others.

Student Supplement 7

B. The related academic and workplace skills being reinforced are identified by skill group, sub skill and description for each task in a unit of instruction.

Example:

Related Academic and Workplace Skills For *Food Production, Management, and Services: Introduction*

Task	Skill Group	Sub Skill	Description
Unit 2: Applying for a job			
Write a resume (A.S. 1)	Foundation Skills	Writing	Organizes information into an appropriate format; applies rules of punctuation, capitalization, and spelling
Write a letter of application for a food service job (A.S. 2)	Foundation Skills	Writing	Writes understandable sentences; organizes sentences into paragraphs; and applies rules of grammar, punctuation, capitalization, and spelling

C. Teaching suggestions are also developed to suggest strategies the teacher might use to reinforce specific skill groups.

Example:

Teaching Suggestions — Food Service: Introduction

1. Discuss the history of food service with the class.

2. Invite former food service students who are presently employed by the food service industry to participate in a panel discussion for the class.

3. Have students obtain want ads from newspapers in your area, then have them write or call prospective employer for more information. Give students an opportunity to share information with one another and to discuss the local job market for food service workers. Skill areas: **oral communication, interpersonal relations**.

4. Assign students to teams and let them prepare a bulletin board on food service careers. Each team should be responsible for a different group of careers and their bulletin boards should be evaluated on creativity, visual impact, and content. Schedule teams at least a week apart so students will have time to view the displays. Skill areas: **creative thinking, interpersonal relations, teamwork, leadership**.

Student Supplement 7

5. Contact a local food service association member to speak to the class on career opportunities. Have students, as a group activity, prepare a list of questions for speaker to address in presentation. Skill areas: **listening, teamwork**.

6. Using information from Assignment Sheet 2, trade journals and other sources of information, have each student prepare a two-page report on a selected food service career. Report should be evaluated on content, proper use of grammar and punctuation, and neatness. Skill areas: **writing, creative thinking**.

7. Subscribe to trade journals that deal with the food service industry to use as additional teaching aids.

8. Provide students with wage and salary figures for various food service jobs in your area.

9. Have each student set a career goal in the food service industry and establish a plan to reach that goal. Decisions should be based on information compiled in completing this unit of instruction. Skill areas: **problem solving, goal setting, personal and career development**.

Developing Teaching/Learning Strategies

Assignment Sheet 1—Discuss Perceptions of Individualized Instruction

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Each item was explained fully, but briefly	______
All parts of each statement were answered	______

Directions: The following items check your comprehension of individualized instruction. Each item requires a short essay-type response. Please explain fully, but briefly, and make sure you respond to all parts of each item.

1. You are sitting in the teachers' lounge talking to an older and more experienced teacher. You are discussing the idea of individualized instruction as it applies to your program area. Respond to the following comments that the other teacher makes in the course of your conversation. Do you agree or disagree with each comment? Why?

   a. "There is nothing new about individualized instruction. Teachers have used projects, laboratory work, and one-on-one teaching for many years."

   ____

   ____

   ____

   ____

   b. "You can't allow students to work out their own objectives and choose their own learning activities. After all, there are a great many things students must know if they are to enter the real world, and I have to see that they know them."

   ____

   ____

   ____

   ____

Assignment Sheet 1

c. "Individualized instruction means a lot of reading, and the students in my classroom just can't read . . . or won't read. I have to provide the needed information through lectures and demonstrations."

d. "In my program area, we do a lot of work for customers, and individualizing instruction would make it impossible to keep up production."

2. Write a brief definition of individualized instruction as you perceive it.

3. Why are objectives that are written in student performance terms so important to success in individualizing instruction?

Assignment Sheet 1

4. Research studies have found that students in programs in which instruction is individualized tend to have an increased interest in their subject, like school more, and have fewer major discipline problems. Why do you suppose this is so?

5. In any discussion of individualized instruction, the need to use a wide variety of instructional media is usually stressed. What is the relationship between media and individualization?

6. What is wrong with "grading on the curve" in individualization? What evaluation techniques might be used instead?

Developing Teaching/Learning Strategies

Assignment Sheet 2—Determine Instructional Activities That Create a Positive Learning Environment

Name ______________________ Overall Rating __________

Evaluation criteria	**Rating**
Two activities were determined for each question	______
Activities were innovative, but realistic	______

The purpose of this assignment sheet is to generate ways to enhance positive feelings and attitudes in teachers' relations with students. Be innovative, but realistic in ways to create a positive learning environment.

Directions: Determine at least two instructional activities for each of the following questions. Write your answers in the space provided.

A. What can we do to reinforce learning efforts of students?

1. ______________________________

2. ______________________________

3. ______________________________

B. What can we do to convey a sense of importance for learning and teaching?

1. ______________________________

2. ______________________________

3. ______________________________

Assignment Sheet 2

C. What can we do to communicate to our students that our program conveys a warm and accepting climate in which students are valued and respected?

1. ____
   ____
2. ____
   ____
3. ____
   ____

D. What dress and appearance standards can we realistically set for students and teachers?

1. ____
   ____
2. ____
   ____
3. ____
   ____

E. What other factors need to be considered to create/improve positive attitudes appropriate to a positive learning environment?

1. ____
   ____
2. ____
   ____
3. ____
   ____

Developing Teaching/Learning Strategies

Assignment Sheet 3—Solve Problems Using Competency-Based Education Instructional Strategies

Name ______________________ Overall Rating __________

Evaluation criteria	**Rating**
Instructional strategy based on CBE concepts	______
Instructional strategy provides a solution to the problem	______
Answers are written in complete sentences	______

Directions: Determine instructional strategies for the following problems. Write your answers in the space provided.

Note: Competency-based education is not dependent upon any single instructional strategy. Any strategy that will assist the student to attain the desired competency is appropriate. Group demonstrations or group instruction may be just as effective as self-paced (or individualized) instruction. The goal remains mastery of tasks by students.

Problem	**CBE Instructional Strategy**
A. The student becomes bored in a group situation and cannot move ahead.	
B. The teacher and students become "locked in" a learning situation. No flexibility is allowed in the program.	

Assignment Sheet 3

C. The student has to guess how to perform in order to make a passing grade.

D. The student becomes tired of simply reading in a textbook or listening to the teacher.

E. The student must stay in the class the entire school year, even though he/she could finish the course requirements in seven months.

Developing Teaching/Learning Strategies

Assignment Sheet 4—Select Instructional Techniques

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Instructional techniques prepared student to achieve competency level of the objective	______
Instructional technique provided student appropriate practice	______
Variety of instructional techniques were stated	______

A variety of techniques should be used in teaching performance objectives. The action verb in the objective can become a key to help determine teaching strategies and selection of instructional techniques. It is important to select instructional techniques for performance objectives that provide appropriate practice and prepare the student to reach the objective. Use a wide variety of instructional techniques.

Directions: Read each specific objective, select an instructional technique that would promote the teaching-learning process, and write your answer in the space provided.

A. Match terms associated with blueprint reading and building codes to the correct definitions.

____

B. List functions of the nervous system.

____

C. Name the basic types of tires.

____

D. State the rule for calculating board feet.

____

E. Arrange in the usual order the steps in proofreading a document.

____

Assignment Sheet 4

F. Distinguish between hereditary and environmental influences on child development.

G. Discuss legal responsibilities for the Licensed Practical Nurse.

H. Identify types of concrete finishes for sidewalks and patios.

I. Select from a list the characteristics of a good food service worker.

J. Classify primary, secondary, and intermediate (tertiary) colors.

K. Construct an ad layout.

L. Demonstrate the ability to braze weld a square groove butt joint.

M. Describe the importance of an electric erasing machine.

N. Calculate cubic inch displacement.

Developing Teaching/Learning Strategies

Assignment Sheet 5—Complete a Checklist for Evaluating a Lesson Plan Using the Problem Solving Approach

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Checklist was completed	_____

In preparing a lesson plan for the problem-solving approach, there are several factors to consider. First, there is some preliminary information that should be presented at the top of the lesson plan. This information should include the unit being studied, the lesson topic, and the objective.

Next, the plan should specify how the lesson will be introduced. In the lesson plan development section, each step in the problem-solving process should be listed, accompanied by a detailed explanation of the method or techniques that will be used to cover each step with the students. A listing of resources to be used in the lesson, or by students in locating the information needed to solve the problem, should also be part of the lesson plan.

In the final section of the plan, the methods to be used in summarizing the lesson and evaluating student achievement should be specified.

Directions: The following is an example of a lesson plan, developed for a lesson on grooming for the job interview, that uses the problem-solving method to present information. Evaluate the lesson plan by completing the checklist included in this assignment sheet.

Problem-Solving Lesson Plan

Unit:	Getting a job
Lesson Topic:	Job Interview: Grooming
Objective:	Given information on an individual's characteristics and on job characteristics, students will correctly determine how the individual should groom for a job interview.

Assignment Sheet 5

Introduction:

- Review briefly the prior lesson on preparing for the interview.
- Show pictures of persons who are well groomed . . . but not in a way that is appropriate for a job interview (e.g., girl dressed for formal dance).
- Describe problem situation of Alan Tiffany and develop the problem statement: "How should Alan Tiffany groom himself for his job interview?"

5 MIN.

Method:

A. Brainstorming/Discussion

Key Questions To Ask To Identify Factors	**Factors To Be Identified By Students**
What is there about Alan Tiffany that will affect your decision?	Personal characteristics
What is there about the job that will affect your decision?	Job characteristics
What else might be important in helping make your decision?	Alan's resources

5 MIN.

B. After brainstorming and identification of the factors, students will identify a list of questions for study for the teacher to write on the board.

Questions for Study

1. What types of clothes look good on different persons (in terms of their weight, height, coloring, etc.)?
2. What types of clothes should some individuals avoid?
3. What type of job is Alan applying for?
4. How formal an organization is it?
5. What type of clothing do the employees and supervisors wear on the job?
6. Is it the type of job in which appearance is critical (e.g., one that involves dealing with the public)?
7. What clothes does Alan have to choose from?
8. Can he afford to purchase a new outfit?

5 MIN.

Assignment Sheet 5

15 MIN.

C. Supervised study—Students will be given their individual copy of the booklet "Guidelines for Grooming" and a copy of the case study problem (which would be attached to this plan) giving all needed information about Alan Tiffany and the job for which he is applying.

Students will work in groups of approximately five persons answering the questions for study and arriving at tentative solutions to the problem.

15 MIN.

D. Students will meet in a large-group situation to discuss answers to the questions and present proposed solutions to the problem.

Resources:	"Guidelines for Grooming" Alan Tiffany Case Study Problem
Summary: 10 MIN.	Students will prepare written summaries (on an individual basis) explaining the final solution they would select, and why (based on what factors).
Evaluation:	Students will compare their written summaries with the model answer (which would be attached to the lesson plan).

Assignment Sheet 5

Checklist for Evaluating a Lesson Plan Using the Problem-Solving Approach

Directions: Check the "F" box if the criteria was fully met, the "P" box if partially met, the "N" box if not met, and the "NA" box if criteria was not applicable.

		Evaluation criteria	**Rating**			
			F	P	N	NA
1.		The introduction clearly identified the purpose (objective) of the lesson	☐	☐	☐	☐
2.		The plan included adequate directions for:	☐	☐	☐	☐
	a.	Clearly identifying and defining the problem	☐	☐	☐	☐
	b.	Identifying all major factors involved in the problem	☐	☐	☐	☐
	c.	Listing specific questions to guide students in gathering information	☐	☐	☐	☐
	d.	Locating sources from which to gather the needed information	☐	☐	☐	☐
	e.	Gathering the needed information	☐	☐	☐	☐
	f.	Determining what additional information was needed	☐	☐	☐	☐
	g.	Identifying possible solutions	☐	☐	☐	☐
	h.	Evaluating each possible solution	☐	☐	☐	☐
	i.	Selecting a tentative solution	☐	☐	☐	☐
	j.	Testing or mentally evaluating the tentative solution	☐	☐	☐	☐
	k.	Assessing the results of testing (if possible)	☐	☐	☐	☐
3.		Methods used to summarize lesson are specified	☐	☐	☐	☐
4.		Methods used to evaluate student achievement are specified	☐	☐	☐	☐
5.		Students will be able to use same problem-solving steps to solve future problems they might encounter	☐	☐	☐	☐

Comments: ____

____

____

Developing Teaching/Learning Strategies

Assignment Sheet 6—Determine Basic Skills Being Reinforced by Performance Objectives

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Basic skills to be reinforced are identified	______
Each basic skill was defined	______
Basic skills for a performance objective were identified	______
Basic skill being reinforced in performance objective was described	______
Teaching suggestion reinforces an identified basic skill	______

One of the issues facing teachers is the reinforcement of basic skills. Academic teachers are being asked to have students apply skills they learned in their classroom to the workplace. Vocational teachers are being asked to identify and reinforce basic skills being taught in the occupational skills area.

The major purpose of this assignment sheet is to outline a procedure for (1) identifying academic and workplace skills and (2) developing instructional strategies to reinforce those skills.

Example: Student Supplement 7—MAVCC's Basic Skills classifies unit tasks (assignment sheets and job sheets) according to related academic and workplace skills being reinforced. Skill areas reflected by skill groups, sub skills, and descriptions have been developed by the American Society for Training and Development (ASTD) and the U.S. Department of Labor and adapted by MAVCC.

Directions: Determine the basic skills being reinforced by performance objectives by completing the following steps.

Step 1: Identify basic skills to be reinforced.

Examples: Writing, science, math

1. ____

2. ____

Assignment Sheet 6

3. ____
4. ____
5. ____
6. ____
7. ____

Step 2: Define each basic skill that has been identified

Example: Writing—Communicating a thought, idea, or fact in written form in a clear, concise manner

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____

Step 3: Using the information from this unit of instruction, identify the basic skills being reinforced for the performance objective: Determine basic skills being reinforced by a performance objective.

Basic skills being reinforced:

Step 4: Briefly describe how a basic skill identified in Step 3 is being reinforced.

Example: Writing—Organizes information into an appropriate format

Assignment Sheet 6

Step 5: Develop a teaching suggestion for the performance objective that would reinforce a basic skill group you have identified in steps 3 and 4.

Developing Teaching/Learning Strategies

Assignment Sheet 7—Develop a Lesson Plan

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Lesson objectives stated	______
Needed materials and aids are listed	______
Strategies for personalizing and localizing unit were determined	______
Introduction for preparation of the student completed	______
Presentation outline completed	______
Criteria stated for application activities	______
Strategies stated for review and summary of lesson	______
Provides for criterion-referenced oral, written, or performance test items	______

Directions: Develop a lesson plan to teach this unit of instruction to a class. Use the four stages for a successful teaching-learning process (preparation, presentation, application, and evaluation) as an outline for your plan. Individualize/localize/supplement the unit to fit your teaching situation and students learning styles.

Note: You may use the following lesson plan form or develop one or your own. Be sure the lesson plan addresses the evaluation criteria stated at the beginning of this assignment sheet.

Assignment Sheet 7

Course Title ______________________________

Unit Title ______________________ Unit # __________

Approximate length of time needed to teach __________________

Lesson Title

Lesson Objective — Upon completing this unit, the student should be able to:

Tools and Materials:

Teaching Aids:

References:

Supplemental Material:

Individualized Informational Assignment for Special Students:

Strategies for Reinforcing Basic Skills:

Assignment Sheet 7

Lesson Plan

Step 1—Introduction for Preparation of the Student:

Step 2—Presentation Outline:

Assignment Sheet 7

Step 3—Classroom, Laboratory, Shop or Other Activities:

Step 4—Lesson Summary and Review Items to be Used to Evaluate the Lesson Against the Lesson Objective:

Assignment Sheet 7

Step 5—Strategies for Administering Test:

Step 6—Timelines for Lesson Plan:

What is the approximate length of time needed to teach this unit? ____________

How much class time is available? ____________

Have you determined how much time is needed to teach each objective?

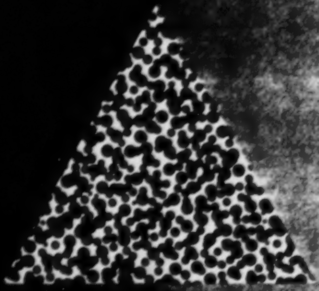
Yes ______ No ______

Have you determined how much time is needed if student is using a LAP or learning step procedure?

Yes ______ No ______

Competency-Based Education

Implementing Criterion-Referenced Evaluation



Implementing Criterion-Referenced Evaluation is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Implementing Criterion-Referenced Evaluation

Objective Sheet

Unit Objective

After completing this unit, the student should be able to determine criteria to evaluate each domain of the Taxonomy of Educational Objectives. The student should demonstrate these competencies by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to implementing criterion-referenced evaluation with their correct definitions.
2. State the purposes for evaluation.
3. State the steps in the alignment concept.
4. Match norm-referenced evaluation and criterion-referenced evaluation with their descriptions.
5. Distinguish between characteristics of norm-referenced and criterion-referenced evaluation.
6. Match domains of the Taxonomy of Educational Objectives with their descriptions.
7. Distinguish between categories of written test items used to measure knowledge.
8. Select from a list advantages of types of written test items.
9. Distinguish between major advantages and disadvantages of using a performance test as an evaluation tool.
10. Match types of performance tests with their descriptions.
11. List types of instruments used to assess student attitudes and values.
12. Determine methods to use in assessing student knowledge. (Assignment Sheet 1)
13. Develop a performance test. (Assignment Sheet 2)
14. Develop an instrument to assess student attitudes. (Assignment Sheet 3)

Implementing Criterion-Referenced Evaluation

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.

2. Review Teaching Suggestions section that follows. Plan for classroom activities.

3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.

4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.

5. Make a transparency from the transparency master included with this unit. This appears in the teacher guide only and is designed to be used with the following objectives:

   TM 1—Task: Shoot 35mm Slides—How Good is Good Enough? (Objectives 4 and 5)

6. Make copies of any handouts that you plan to distribute to students.

7. Obtain videotapes, posters, charts, and other items to supplement instruction of this unit. (See Suggested Supplemental Resources section.)

8. Review instructions for evaluating student performance, and make copies of unit evaluation form.

Delivery and Application

9. Provide students with unit of instruction.

10. Discuss unit and specific objectives.

11. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.

12. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Suggested Activities

Evaluation

13. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

14. Make copies of the written test. Add or modify test items as needed.

15. Give written test.

16. Compile assignment sheet ratings and written test scores on the Unit Evaluation Form. Include any additional assignments.

17. Reteach and retest as required.

Teaching Suggestions

1. Find cartoons that illustrate assessment and evaluation.

2. Collect examples of assessment and evaluation instruments for measuring student knowledge, performance, and/or attitudes.

3. Have students discuss the research findings in Student Supplements 1 and 2 while studying Objective 2. Emphasize the importance of monitoring and feedback to the student and teacher.

4. Use Teacher Supplement 1 to provide additional criteria for developing competency-based evaluation measures.

5. Use TM 1 to illustrate differences in norm-referenced and criterion-referenced evaluation. Explain that with norm-referenced evaluation the student's score is 90 percent, but with criterion-referenced evaluation the student's score is zero because the student did not successfully complete the objective.

6. Have students discuss the research finding "Business leaders report that students with solid basic skills and positive work attitudes are more likely to find and keep jobs than students with vocational skills alone" while studying Objective 11 and Assignment Sheet 3. Emphasize workplace skills and how they may be reinforced and objectively evaluated in the school setting.

7. When discussing Objective 11 and Assignment Sheet 3, use Teacher Supplement 2 as an example of an instrument used to evaluate the affective domain.

8. Provide students with an opportunity to share their feelings/thoughts about the evaluation process. Use this activity to summarize unit content.

Suggested Activities

References Used in Developing This Unit

1. Brannon, Donald R., Gerald F. Day, and Donald Maley. *How to Evaluate Students in a CBVE Program.* Cresaptown, MD: Western Maryland Vocational Resource Center, 1978.
2. Gronlund, Norman E. *Measurement and Evaluation in Teaching.* New York: Macmillan Publishing Company, 1985.
3. Hattaway, Brenda C. *Testing.* Bend, OR: Presentation to Northwest Conference on Competency-Based Vocational Education, October 1989.
4. *Instructional Evaluation (Category D).* Columbus, OH: CETE, Ohio State University, n.d.
5. Oen, Urban T. *Construct Performance and Written Evaluation Instruments.* Addision, IL: Competency-Based Individualized Vocational Education, 1985.
6. Pierce, Greg. *Developing Performance-Based Test Items: A Guide for Writers.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1987.
7. Powell, Cheryl R. *Competency-Based Curriculum Development Manual.* Northern Iowa Area Community College, September, 1987.
8. Smith, Carole A. *Landscape Management: Field Operator.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1988.
9. *What Works: Research About Teaching and Learning.* Washington, DC: United States Department of Education, 1987.

Suggested Supplemental Resources

1. *Category D: Instructional Evaluation* materials. To order, write AAVIM, 745 Gaines School Road, Athens, GA 30605. Ask for their catalog of materials.
2. VTECS (Vocational Technical Education Consortium of States) Catalog. Products include performance guides, an automated cross referencing occupational system, criterion-referenced test item banks, and curriculum guides. For further information, contact VTECS, Southern Association of Colleges and Schools, 1866 Southern Lane, Decatur, GA 30033-4097. Call 1-800-248-7701 or (404) 329-6543.
3. *What Works: Research About Teaching and Learning.* To order, write What Works, Pueblo, CO 81009. For price information, call (202) 783-3238.

Suggested Activities

4. Competency profiles from the following:

    a. Curriculum and Instructional Materials Center (CIMC)
    1500 West Seventh Avenue
    Stillwater, OK 74074

    Note: Competency profiles include a form for evaluating a student's interpersonal competencies.

    b. Instructional Materials Laboratory
    London Hall
    University of Missouri-Columbia
    Columbia, MO 65211

    Note: Competency profiles include a form for rating a student's personal characteristics, job seeking techniques, and entrepreneurship awareness.

Implementing Criterion-Referenced Evaluation

Answers to Assignment Sheets

Assignment Sheet 1

Part I

Performance Objective 1: C. Objective states the student should label the major clutch parts.

Performance Objective 2: A. Objective asks the student to identify on sight the plants and to list the environmental conditions required for the plants.

Part II — Possible answers

Situation 1:

a. Oral exam, written exam

b. Teacher could ask students to state or list safety rules for mixing pesticides. If wearing gloves is not mentioned, the teacher knows this will have to be taught to student.

Situation 2:

a. Written tool identification test, demonstration

b. Teacher could have students identify pictures or actual tools and ask them to state how and when tools would be used. Teacher could also demonstrate proper use of tools.

Assignment Sheet 2

Establishing and Maintaining Turf
Unit 6

Performance Evaluation
Job Sheet 3—Plant a Prepared Site by Sodding

Name ______________________ Attempt Number ______________

Date ______________________ Overall Rating ______________

Instructions: When you are ready to perform this task, ask your teacher to observe the procedure and complete this form. All items listed under "Process Evaluation" must receive a "Yes" for you to receive an overall performance evaluation.

Process Evaluation

Evaluator Note: Place a check mark in the "Yes" or "No" blanks to designate whether or not the student has satisfactorily achieved each step in this procedure. If the student is unable to achieve this competency, have the student review the materials and try again.

The student:	Yes	No
1. Checked out proper tools and materials.	______	______
2. Checked soil moisture.	______	______
3. Transported sod to site.	______	______
4. Laid sod correctly to fill area.	______	______
5. Rolled sod into good contact with soil surface.	______	______
6. Watered sod well.	______	______
7. Cleaned work area and tools.	______	______
8. Checked in/put away tools and materials.	______	______

Evaluator's Comments: ____

____

____

Assignment Sheet 2 (continued)

Job Sheet 3—Performance Evaluation

Product Evaluation

Evaluator Note: Rate the student on the following criteria by circling the appropriate numbers. Each item must be rated at least a "3" for mastery to be demonstrated. (See "Performance Evaluation Key" below.) If the student is unable to demonstrate mastery, student materials should be reviewed and another product must be submitted for evaluation.

Criteria:				
Correct sod was planted	4	3	2	1
No cracks between sod	4	3	2	1
No overlaps of sod	4	3	2	1
Sod was watered adequately	4	3	2	1
Evidence of rolling to remove air pockets	4	3	2	1
Site area is neat and attractive	4	3	2	1

Evaluator's Comments: ____________________

____

____

Performance Evaluation Key	
4 -	Skilled—Can perform job with no additional training.
3 -	Moderately skilled—Has performed job during training program; limited additional training may be required.
2 -	Limited skill—Has performed job during training program; additional training is required to develop skill.
1 -	Unskilled—Is familiar with process, but is unable to perform job.

Evaluator Note: If an average score is needed to coincide with a competency profile, total the designated points in "Product Evaluation" and divide by the total number of criteria.

Answers to Assignment Sheets

Assignment Sheet 3 — All criteria items (unless not applicable) should receive an acceptable rating before proceeding. If any item receives an unacceptable rating, have student review the material and try again.

Implementing Criterion-Referenced Evaluation

Answers to Written Test

1. a. 5
   b. 2
   c. 1
   d. 4
   e. 3

2. a. To measure student performance
   b. To measure teacher effectiveness

3. a. Determine intended outcomes.
   b. Develop instructional strategies that teach toward outcomes.
   c. Evaluate the same learner outcomes.

4. a. 2
   b. 1

5. a. N
   b. C
   c. N
   d. N
   e. C
   f. C
   g. N
   h. C
   i. N
   j. N
   k. C
   l. C
   m. N
   n. C

6. a. 3
   b. 2
   c. 1

7. b

8. a, c, d, e, i, k, n, o

9. a. A
   b. D
   c. D
   d. A
   e. A
   f. D
   g. D
   h. A

10. a. 2
    b. 3
    c. 1

Answers to Written Test

11. Answers should include four of the following:

    a. Observation checklists
    b. Rating scales
    c. Interviews
    d. Problem-solving or case studies
    e. Oral exams
    f. Questionnaires and inventories
    g. Teacher's annotative records

Implementing Criterion-Referenced Evaluation

Written Test

Name ______________________________ Score ______________

1. Match terms related to implementing criterion-referenced evaluation on the right with their correct definitions.

______a. Criteria which specifies exactly what constitutes successful completion of a prescribed performance

______b. Agreement among the intended outcomes, instruction, and evaluation

______c. Describes situation under which task will be performed

______d. A statement of what the student must do in observable and measurable terms

______e. Process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

1. Condition
2. Curriculum alignment
3. Evaluation
4. Performance objective
5. Standard

2. State the purposes for evaluation.

a. ____

b. ____

3. State the steps in the alignment concept.

a. ____

b. ____

c. ____

Written Test

4. Match norm-referenced evaluation and criterion-referenced evaluation with their descriptions.

   ______a. Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

   ______b. Procedure that measures student performance or knowledge as compared to other students

   1. Norm-referenced evaluation

   2. Criterion-referenced evaluation

5. Distinguish between characteristics of norm-referenced and criterion-referenced evaluation. Place an "N" in the blanks next to a norm-referenced characteristic and a "C" next to a criterion-referenced characteristic.

   ______a. Goal is to report how student scores compared to other students.

   ______b. Evaluation focuses on mastery or non-mastery of stated objectives.

   ______c. Retesting is discouraged.

   ______d. Student is measured along a line of varying levels of competence.

   ______e. Student is measured along a line of time when competency is attained.

   ______f. Criteria is fixed and determined before test is administered.

   ______g. Time frame is usually held constant; competency level varies.

   ______h. Group performance can be quite high: students are encouraged to reach mastery.

   ______i. Competition is among students.

   ______j. Evaluation focuses on how each score compares to the norm.

   ______k. Retesting is encouraged after student "recycles" through learning activities.

   ______l. Time frame varies for reaching task mastery; competency level is held constant.

   ______m. Criteria is relative and is usually determined after scores are reviewed.

   ______n. Goal is to report which students scored at minimum criterion level.

Written Test

6. Match domains of the Taxonomy of Educational Objectives on the right with their descriptions.

______a. Deals with the physical responses of the learner and the development of manipulative skills

______b. Deals with changes in interest, attitudes, and values and the development of appreciations and adequate adjustment

______c. Deals with recall or recognition of knowledge and the development of intellectual abilities and skills

1. Cognitive
2. Affective
3. Psychomotor

7. Distinguish between categories of written tests items used to measure knowledge by placing an "R" next to the examples of recognition items.

______a. Essay, short answer, definition, identification

______b. Multiple choice, matching, true-false

8. Select from a list advantages of types of written test items. Place an "X" on the blank before each advantage.

Multiple choice

______a. Eliminates subjective scoring

______b. Is sometimes hard to find good options

______c. Is versatile—can be used to measure recall of information or application of principle

Matching

______d. Is useful in assessing student's ability to match words with definitions, events with places, concepts with words or symbols, etc.

______e. Can test large amount of factual information in a relatively short time

______f. Is often difficult to develop a good set of matching items

Written Test

True-false

______g. Encourages student guessing

______h. Is fairly limited to recall of information

______i. Eliminates subjective scoring

Short answer or essay

______j. Is time-consuming to score

______k. Can measure more types of complex achievement

______l. Is difficult to score objectively

Completion

______m. Is limited to recall of information rather than application of principles in new situations

______n. Is relatively easy to construct

______o. Reduces the chances of the student's guessing the correct response

9. Distinguish between major advantages and disadvantages of using a performance test as an evaluation tool. Place an "A" beside advantages and a "D" beside disadvantages.

______a. Stresses application of knowledge

______b. Is often time-consuming

______c. Is often difficult to grade

______d. Can be used as a learning device

______e. May give a truer achievement picture

______f. Is difficult to construct from "scratch"

______g. Is not adaptable to some performance objectives

______h. Measures some skills and abilities not measured by other test forms

Written Test

10. Match types of performance tests on the right with their descriptions.

______a. Evaluation of both the procedure used and the end result achieved

______b. Measure of student's ability to perform a given procedure

______c. Rating of the product of student's performance

1. Product evaluation
2. Process/product evaluation
3. Process evaluation

11. List four types of instruments used to assess student attitudes and values.

a. ______________________________

b. ______________________________

c. ______________________________

d. ______________________________

***Permission to duplicate this test is granted.**

Implementing Criterion-Referenced Evaluation

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Determine Methods to Use in Assessing Student Knowledge Rating _____

Comments: ____

____

Assignment Sheet 2—Develop a Performance Test Rating _____

Comments: ____

____

Assignment Sheet 3—Develop an Instrument to Assess Student Attitudes Rating _____

Comments: ____

____

Written Test Scores

Pretest _____ Posttest _____ Other _____

Other ____

____

Teacher Signature ______________________________ Date __________

Student Signature ______________________________ Date __________

***Permission to duplicate this form is granted.**

Implementing Criterion-Referenced Evaluation

Learning Steps

Name ______________________________

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Study** Information Sheet, Objectives 1 through 8, pp. 3-7, and Student Supplements 1, 2, and 3, pp. 15-21.

______ 3. **Do** Assignment Sheet 1—Determine Methods to Use in Assessing Student Knowledge, pp. 25-28.

______ 4. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 5. If evaluation is not satisfactory, repeat steps 2 through 4.

______ 5. **Study** Information Sheet, Objectives 9 and 10, pp. 8 and 9, and Student Supplement 4, p. 23.

______ 6. **Do** Assignment Sheet 2—Develop a Performance Test, pp. 29-36.

______ 7. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 8. If evaluation is not satisfactory, repeat steps 5 and 6.

______ 8. **Study** Information Sheet, Objective 11, pp. 10-13.

______ 9. **Do** Assignment Sheet 3—Develop an Instrument to Assess Student Attitudes, p. 37.

______ 10. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 11. If evaluation is not satisfactory, repeat steps 8 and 9.

______ 11. **Take** Written Test. (See teacher.) If your score is 85 percent or above, continue to step 12. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______ 12. **Sign** Unit Evaluation Form to verify ratings received on assignment sheets and written test.

***Permission to duplicate this form is granted.**

Implementing Criterion-Referenced Evaluation

Teacher Supplement 1—Competency-Based Evaluation Measures Checklist

The following checklist should be helpful in clarifying competency measures. Use the checklist to assess the accuracy of the competency measures you develop.

Performance tests:	**Yes**	**No**
Is the student told exactly what to do?	____	____
Are any special restrictions mentioned?	____	____
Is any time limit mentioned?	____	____
Do items measure whether the student can perform a given task?	____	____
Is each item objective and observable?	____	____
Are items listed in the order they occur?	____	____
Are items written at a high enough level to ensure the job competence of those passing the test?	____	____
Are process items included if the process is important for competence on the job?	____	____
Are process items based on the procedure steps in the task analysis?	____	____
Is only one step included per process item?	____	____
Are product-related items included if the quality of a finished product is critical for competence?	____	____
Are criteria for acceptability of product-related items spelled out clearly (size, location, precise dimensions, etc.)?	____	____
Is only one product characteristic included per test item?	____	____
Do the standards for criterion levels specify the performance, conditions, and criteria necessary to achieve a given objective?	____	____
Have you established various levels of performance criteria for each criterion level?	____	____
Does each criterion level you construct measure a performance objective you have set for the students to achieve?	____	____
Can checklist items be rated yes or no?	____	____

Teacher Supplement 1

Written tests:	**Yes**	**No**
Is the purpose of the test stated?		
Is the student told how to respond to test items?		
Is the mastery score indicated?		
If applicable, is a time limit mentioned?		
Do all items relate directly to the knowledge involved in the task?		
Are there a sufficient number of test items to assess adequate mastery of the task?		
If the task involves mastery of higher-level concepts and principles, does the test evaluate this?		
Is each multiple choice stem complete enough for students to determine the answer without looking at the alternatives?		
Is each multiple choice stem a phrase, statement, or question?		
Does each multiple choice stem state the problem or question clearly?		
Are multiple choice alternatives similar in length and point of view?		
Is each multiple choice alternative a reasonable, plausible response with only one complete thought?		
Are there four or five alternatives for each multiple choice item?		
Is there only one correct answer for each multiple choice question?		

Source: *Competency-Based Curriculum Development Manual*

Implementing Criterion-Referenced Evaluation

Teacher Supplement 2—Rating Scale on General Work Habits

Work Habits and Attitudes Evaluation Form

Student's name ______________________________

Rater's name ______________________________ Date ____________________

Total days absent _____ Excused _____ Unexcused _____

WORK HABITS	Ignores directions	Follows some directions, works inefficiently	Follows directions and works satisfactorily	Steady, conscientious worker	Very accurate, resourceful and efficient
SAFETY HABITS	Sloppy and hazardous to self and others	Fair, needs improvement	Generally works safely	Meets required safety standards	Neat, conscientious, and careful
WORK AREA NEATNESS	Very sloppy, inconsiderate	Forgetful and unconscientious	Adequate	Thorough	Pride in overall appearance
WORK AREA ATTENDANCE	Often not in work area	Makes excuses to leave	Generally in work area	Seldom leaves work area	Always where assigned
SELF-ESTEEM	Does not display self-confidence	Insecure, self-conscious	Balanced attitude	Positive self-evaluation	Self-confident and secure
INTEGRITY	Not trustworthy	Erratic	Sincere	Reliable and dependable	Exceptionally trustworthy
RESPONSIBILITY	Unreliable	Sometimes reliable	Usually reliable	Conscientious	Very reliable
MOTIVATION	Apathetic	Seldom motivated	Generally motivated	Interested in excelling	Highly involved and motivated
INITIATIVE	Requires constant pressure	Needs occasional prodding	Does assigned work	Occasionally seeks extra work	Seeks and recognizes work to be done
EFFORT	Quitter	Applies minimal effort	Shows satisfactory effort	Shows growing determination	Determined, persevering, and diligent
PEER RELATIONS	Uncooperative	Sometimes hard to work with	Generally cooperative	Works very well with others	Outgoing, warm, and cooperative
LEADERSHIP	Does not lead	Follows well	Shows leadership when requested	Voluntarily displays leadership	Consistent leader
REACTION TO AUTHORITY	Hostile	Indifferent	Accepting	Generally cooperative	Exceptionally cooperative
PERSONAL APPEARANCE	Sloppy	Needs improvement	Acceptable	Neat and attractive	Exceeds requirements

Teacher's comments: ____

Source: *How to Evaluate Students in a CBVE Program*

Task: Shoot 35MM Slides
How Good is Good Enough?

	Yes	No
1. Was proper film selected for subjects?	X	
2. Was film loaded in dark areas?	X	
3. Were manufacturer's instructions followed in loading film?	X	
4. Was dial set to proper ASA setting?	X	
5. Was camera held in dominant hand and settings made with other hand?	X	
6. Was shot and angle chosen to maximize scenery and background?	X	
7. Was lens cap removed?		X
8. Was exposure set for light conditions?	X	
9. Was shutter squeezed without shaking camera?	X	
10. Was film advanced immediately?	X	
Norm-Referenced	90%	
Criterion-Referenced		0%

TM 1

Implementing Criterion-Referenced Evaluation

Information Sheet

1. **Terms and definitions related to implementing criterion-referenced evaluation**

    a. **Condition** — Describes situation under which task will be performed

    b. **Curriculum alignment** — Agreement among the intended outcomes, instruction, and evaluation

    c. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

    d. **Performance objective** — A statement of what the student must do in observable and measurable terms

    e. **Standard** — Criteria which specify exactly what constitutes successful completion of a prescribed performance

2. **Purposes for evaluation**

    a. **To measure student performance**

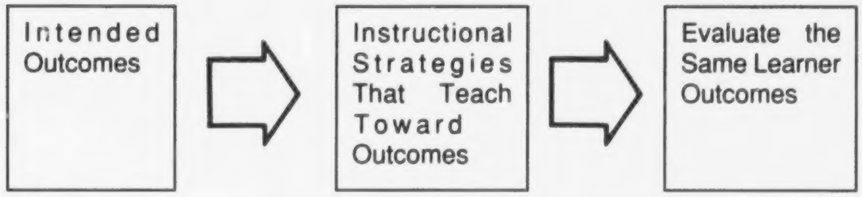
    Note: An evaluation provides the teacher and student with a view of the student's strengths and achievements.

    b. **To measure teacher effectiveness**

    Note: Through an evaluation the teacher can determine what changes need to be made in the instructional plans in order to meet individual needs. Evaluation also helps to identify those students who are ready to move on to new learning activities and those who need additional help in certain areas.

3. **Steps in the alignment concept**

Figure 1


Intended Outcomes
Instructional Strategies That Teach Toward Outcomes
Evaluate the Same Learner Outcomes

a. **Determine intended outcomes.**

Examples: Duties, tasks, competencies

b. **Develop instructional strategies that teach toward outcomes.**

Examples: Select instructional materials, determine teaching methods

c. **Evaluate the same learner outcomes.**

Examples: Criterion-referenced tests, performance tests

4. **Descriptions of norm-referenced evaluation and criterion-referenced evaluation**

a. **Norm-referenced evaluation** — Procedure that measures student performance or knowledge as compared to other students

Note: Norm-referenced testing does not measure whether a student is competent in a task at some pre-determined level of acceptability.

b. **Criterion-referenced evaluation** — Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

Note: If a student does not attain an objective or task, he or she continues to work on it until the task can be performed at the criterion level specified. Criterion-referenced evaluation is a major component of competency-based education.

Information Sheet

5. **Characteristics of norm-referenced and criterion-referenced evaluation** (Table 1)

Table 1

Criteria	Norm-referenced	Criterion-referenced
Goal	To report how student scores compared to other students	To report which students scored at minimum criterion level
Evaluation criteria	Relative (depends on how the group scores): determined *after* scores are reviewed	Fixed: determined *before* test is administered
Time frame	Usually held constant; competency level varies	Varies for reaching task mastery; competency level held constant
Group performance	Usually moderate: a few score high, a few low, and most average	Can be quite high: students are encouraged to reach mastery
Competition focus	Among students	Against a criterion level
Evaluation focus	Evaluated in relation to how each score compares to the norm	Evaluated in relation to mastery or nonmastery of stated objectives
Retesting philosophy	Discouraged	Encouraged after student "recycles" through learning activities
Student measurement	Along a line of varying levels of competence	Along a line of time when competence is attained

6. **Descriptions of the domains of the Taxonomy of Educational Objectives**

   a. **Cognitive** — Deals with recall or recognition of knowledge and the development of intellectual abilities and skills (knowing)

   Note: Levels within the cognitive domain are knowledge, comprehension, application, analysis, synthesis, and evaluation. The cognitive domain is sometimes referred to as *Bloom's Taxonomy*.

Information Sheet

b. **Psychomotor** — Deals with the physical responses of the learner and the development of manipulative skills (doing)

Note: Levels within the psychomotor domain are perception, set, guided response, mechanism, and complex overt response.

c. **Affective** — Deals with changes in interest, attitudes, and values and the development of appreciations and adequate adjustment (feeling)

Note: Levels within the affective domain are receiving, responding, valuing, organization, and characterization.

7. **Categories of written test items used to measure knowledge**

Note: To determine which type of test item to use, examine the performance objective for the task and match the test item with the desired competency level.

a. **Recognition items** — Test items requiring a student to respond to a question or statement by selecting a correct answer or by determining whether the statement is correct or incorrect

- Multiple choice
- Matching
- True-false

b. **Constructed-response items** — Test items requiring a student to construct his or her own response to a question or statement

- Essay
- Short answer
- Definition
- Identification

Information Sheet

8. Advantages and limitations of types of written test items (Table 2)

Table 2

Type of test item	Advantages	Limitations
Multiple choice	• Eliminates subjective scoring • Reduces guessing • Is versatile—can be used to measure recall of knowledge or application of principles	• Is difficult to write good items • Is sometimes hard to find good options • Requires longer student response time than true-false items
Matching	• Can test large amount of factual information in a relatively short time • Eliminates subjective scoring • Is useful in assessing student's ability to match words with definitions, events with places, concepts with words or symbols, etc.	• Is often difficult to develop a good set of matching items
True-false	• Allows the teacher to ask questions about a large content area in a short amount of student time • Eliminates subjective scoring • Is a realistic task for many students in that they are often asked to judge the truth of a statement in real life	• Encourages student guessing • Is often misused to test unimportant or highly specific information • Is fairly limited to recall of information • Is difficult to construct good, unambiguous items

Information Sheet

Table 2 (continued)

Type of test item	Advantages	Limitations
Short answer and essay	• Is relatively easy to construct • Can measure more types of complex achievement • Can place emphasis on larger units of instruction • Requires the student to organize an original response • Reduces possibility of student's guessing correct answer	• Is time-consuming to score • Limits the area to be tested since more time is required for each student response • Is difficult to score objectively • Confounds the student's ability to communicate in writing with the actual ability to answer the question
Completion	• Reduces the chances of the student's guessing the correct response • Is relatively easy to construct	• May not be as objective to score as multiple choice, true-false, or matching • Is limited to recall of information rather than application of principles in new situations

9. **Major advantages and disadvantages of using a performance test as an evaluation tool** (Table 3)

Note: A performance test is an appropriate tool for measuring whether a student can actually perform a task in a given setting at some designated level of acceptability.

Table 3

Advantages	Disadvantages
Stresses application of knowledge	Is not adaptable to some performance objectives
Are readily available for many performance objectives	Is difficult to construct from "scratch"
Can be used as a learning device	Is often difficult to grade
May give a truer achievement picture	Is often time-consuming
Measures some skills and abilities not measured by other test forms	

Information Sheet

10. **Descriptions of types of performance tests**

    a. **Process evaluation** — Measure of student's ability to perform a given procedure

    Note: Evaluation instrument is a checklist.

    Example: Student is asked to spray a pesticide. Teacher would want to be sure student follows the correct procedure and uses the proper safety precautions.

    b. **Product evaluation** — Rating of the product of student's performance

    Note: Evaluation instrument is a rating scale.

    Example: Student has made a floral arrangement. Final product criteria could be: Is the completed arrangement in the desired form? Is there a focal point? Are the colors compatible?

    c. **Process/product evaluation** — Evaluation of both the procedure used and the end result achieved

    Note: Evaluation instrument includes a checklist and a rating scale.

    Example: Steam cleaning an engine. The teacher would want to make sure the student used proper safety precautions. The teacher would also be concerned about the final product—an engine that has been thoroughly cleaned, but has not lost paint because spray was held on one area too long.

Information Sheet

11. Types of instruments used to assess student attitudes and values

a. Observation checklists

Note: The following instrument documents student's work habits at school and on the job. The checklist could include: whether students arrive at school or job on time, how prepared they are in class, how much they participate in class activities and discussions, how well they work with others, and so on. The checklist would be used when you observe behavior of one student. It should not be completed in one class period, but would be filled in over a period of time, possibly over a semester.

Example:

Student's Name ____________________ Date __________

Evaluator ____________________ Title __________

Directions: Record the date and time when the behavior occurs in the column on the right-hand side of the listed behavior.

Behavior	Date and Time
1. Participated in class activities . . .	
2. Joined in class discussion . . .	
3. Volunteered to do something . . .	
4. Completed assignment on time . . .	

Note: The following checklist would be used on a weekly basis by the teacher to observe basic behaviors of all the students in the class.

Example:

	Students							
Behaviors for week of ______								
1. Arrives at class on time.								
2. Has materials and is prepared for class . . .								

Information Sheet

b. Rating scales

Note: Rating scales may be used to assess general work habits and attitudes in the classroom or on the job. The rating scale below would be most useful when used to evaluate a student on the job. It could be used by the employer to rate a student on work experience. The evaluation would be turned in to the school or teacher at the end of the experience or on a weekly basis.

Example:

Supervised Work Student Rating Form

Directions: Rate the student on each of the following items by circling the appropriate numbers. If the item does not apply circle "a." If you do not have sufficient information to respond to a particular item, circle "b." Add comments to the last page which may help in understanding and counseling the student. This form is to be completed weekly and returned to the appropriate person each week.

Student's Name ______

Rater's Name ______

Date of Rating ______

1. I WOULD RATE THIS STUDENT:	1 very independent	2 independent except when faced with change	3 dependent only on non-routine tasks	4 dependent	5 very dependent	a does not apply	b insufficient information
2. WHEN FACED WITH CHANGE, THIS STUDENT:	1 displays adequate flexibility	2 exhibits flexibility under most conditions	3 exhibits tendency to resist change	4 displays consistent resistance to change	5 displays excessive rigidity	a does not apply	b insufficient information
3. WITH REGARD TO MATURITY, I WOULD RATE THIS STUDENT'S BEHAVIOR AS:	1 always stable	2 generally stable	3 occasionally unstable	4 frequently unstable	5 generally unstable	a does not apply	b insufficient information
4. IN WORK SITUATIONS INVOLVING A GROUP, THIS STUDENT:	1 seeks to be involved	2 participates willingly	3 participates when encouraged	4 avoids participation	5 refuses to participate	a does not apply	b insufficient information
5. IN RESPONSE TO SUPERVISION, THIS STUDENT:	1 accepts direction	2 passively accepts authority	3 accepts but resents authority	4 resents & rejects some direction	5 rejects authority	a does not apply	b insufficient information
6. I WOULD RATE THIS STUDENT'S RECEPTION OF COMMUNICATION AS:	1 excellent	2 very good	3 average	4 fair	5 poor	a does not apply	b insufficient information

c. Interviews

Note: The formal or structured interview is held on a one-to-one basis with questions prepared ahead of time. The informal interview is less structured and may be just a conversation.

d. Problem-solving or case studies

Note: This method can be used to measure an affective objective. The teacher could present situations for student response.

Information Sheet

e. Oral exams

Note: An oral exam is sometimes called an *informal interview* or *informal essay*. The teacher seeks insight into how the student feels about a laboratory or job experience by asking student to evaluate his or her experience.

Example:

Occupational Values

Consider to what extent a job career should satisfy each of these requirements before you would consider it IDEAL. Check the responses that best describe your feelings.

The ideal job for me would have to:

______1. Provide an opportunity to use my special abilities or aptitudes.

______2. Provide me with a chance to earn a good deal of money.

______3. Permit me to be creative and original.

______4. Give me social status and prestige.

______5. Give me an opportunity to work with people rather than things.

______6. Enable me to look forward to a stable, secure future.

______7. Leave me relatively free of supervision by others.

______8. Give me a chance to exercise leadership.

______9. Provide me with adventure.

______10. Give me an opportunity to be helpful to others.

Go back and look at the requirements you checked. Rank them in order of importance to you by entering a "1" for the most important, a "2" for the next most important, and so on for all checked items.

Information Sheet

f. **Questionnaires and inventories**

Note: On questionnaires and inventories, a student is asked to evaluate how he or she feels about something or to construct a response.

Example:

	Of no importance	Of little importance	Of some importance	Of great importance
Making a lot of money	1	2	3	4
Opportunity to be original and creative	1	2	3	4
Opportunity to be helpful to others	1	2	3	4
Avoiding high pressure	1	2	3	4
A chance to be a leader	1	2	3	4
A stable, secure future	1	2	3	4
A chance to be my own boss	1	2	3	4
Living in a place where both my spouse and I will be able to find meaningful work	1	2	3	4

g. **Teacher's annotative records**

Note: An annotative record is a record a teacher keeps on a student to document his or her habits and attitudes.

Implementing Criterion-Referenced Evaluation

Student Supplement 1—Assessment

Research finding:

Frequent and systematic monitoring of students' progress helps students, parents, teachers, administrators, and policymakers identify strengths and weaknesses in learning and instruction.

Comments:

Teachers find out what students already know and what they still need to learn by assessing student work. They use various means, including essays, quizzes and tests, homework, classroom questions, standardized tests, and parents' comments. Teachers can use student errors on tests and in class as early warning signals to point out and correct learning problems before they worsen. Student motivation and achievement improve when teachers provide prompt feedback on assignments.

Students generally take two kinds of tests: classroom tests and standardized tests. Classroom tests help teachers find out if what they are teaching is being learned; thus, these tests serve to evaluate both student and teacher. Standardized tests apply similar gauges to everyone in a specific grade level. By giving standardized tests, school districts can see how achievement progresses over time. Such tests also help schools find out how much of the curriculum is actually being learned. Standardized tests can also reveal problems in the curriculum itself. For example, a recent international mathematics test showed that U.S. students had encountered only 70 percent of what the test covered.

References:

Freeman, D. J. et al. (1983). "Do Textbooks and Tests Define a National Curriculum in Elementary School Mathematics?" *The Elementary School Journal*, Vol. 83, No. 5, pp. 501-513.

Good, T. L., and D. A. Grouws (1979). "The Missouri Mathematics Effectiveness Project: An Experimental Study in Fourth Grade Classrooms." *Journal of Educational Psychology*, Vol. 71, No. 3, pp. 355-362.

Rosenshine, B. (1983). "Teaching Functions in Instructional Programs." *The Elementary School Journal*, Vol. 83, No. 4, pp. 335-351.

Rutter, M. (1983). "School Effects on Pupil Progress: Research Findings and Policy Implications." In L. S. Shulman and G. Sykes (Eds.), *Handbook of Teaching and Policy* (pp. 3-41). New York: Longman.

Stallings, J. A., and D. Kaskowitz (1974). *Follow Through Classroom Observation Evaluation, 1972-73.* Menlo Park, CA: Stanford Research Institute. ERIC Document No. ED. 104969.

Source: *What Works: Research About Teaching and Learning.*

Implementing Criterion-Referenced Evaluation

Student Supplement 2—Teacher Feedback

Research finding:

Constructive feedback from teachers, including deserved praise and specific suggestions, help students learn, as well as develop positive self-esteem.

Comments:

Teachers should not underestimate the impact of constructive feedback on their students. Providing positive and timely comments is a practice that teachers at all levels can use. These comments help students correct errors and give them recognition when deserved. Helpful feedback praises successful aspects of a student's work and points out those areas that need improvement.

Useful feedback, whether positive or negative, is prompt, germane, and includes specific observations and recommendations. It tells students what they are doing, how they are doing it, and how they can improve. Whether written or spoken, effective feedback is initiated by the teacher and is given privately rather than in front of the class. An example of effective feedback is: "Your book report is well written, Paul. The content is clear because the ideas are presented in a logical order and the details support your main idea. Your use of some clever examples makes your book report enjoyable to read. Next time, let's work harder to organize your time so that you will meet the assigned deadline." An example of ineffective feedback is: "Your book report is well written, Paul. But it is late and I'm upset about that."

Students who are accustomed to failure and who have difficulty mastering skills react more positively to encouragement and praise from teachers than to criticism. Effective teachers successfully use praise to motivate their low-achieving students. On the other hand, higher-achieving students respond more to specific comments and suggestions about their work.

Through constructive, timely feedback, teachers can reinforce and help develop positive self-esteem in their students. Students who believe they can succeed are usually more successful than those with low self-esteem when it comes to participating in activities, working independently, getting along with others, and achieving academically.

Student Supplement 2

References:

Beane, J. A., and R. P. Lipka (1986). *Self-Concept, Self-Esteem, and the Curriculum.* New York: Teachers College Press, Columbia University.

Brophy, J. (Spring 1981). "Teacher Praise: A Functional Analysis." *Review of Educational Research*, Vol. 51, No. 1, pp. 5-32.

Griswold, P. A., K. J. Cotton, and J. B. Hansen (1986). *Effective Compensatory Education Sourcebook*, Vols. I and II. Portland, OR: Northwest Regional Education Laboratory.

Hawley, W. D., S. J. Rosenholtz, H. Goodstein, and T. Hasselbring (1984). "Good Schools: What Research Says About Improving Student Achievement." *Peabody Journal of Education*, Vol. 61, No. 4, pp. 1-178.

Lysakowski, R. S., and H. J. Walberg (1981). "Classroom Reinforcement and Learning: A Quantitative Synthesis." *Journal of Educational Research*, Vol. 75, No. 1, pp. 69-77.

Orlich, D. (1985). *Teaching Strategies, A Guide to Better Instruction.* Lexington, MA: D. C. Heath and Company.

Source: *What Works: Research About Teaching and Learning.*

Implementing Criterion-Referenced Evaluation

Student Supplement 3—Guidelines for Developing Types of Written Test Items

Multiple choice

1. If the student is required to select the best answer, be sure that there is only one answer that is clearly the best.
2. Write the test item so that most of the words are in the stem, not in the options.
3. Avoid the use of negative expressions both in the stem and in the options.
4. All test options should be reasonable, practical, and appealing to the student who does not know the correct answer.
5. The length of the test options should not relate to the correctness of the option (the correct option should not be noticeably shorter or longer than the other options).
6. The number of test options should be varied from three to five.
7. Make all of the test options grammatically consistent.
8. Order the options within a test item in some logical sequence (i.e., alphabetical, numerical).

Matching

1. The list of premises and responses can be equal or unequal in length.
2. The lists of premises and responses should be as homogenous as possible. Avoid mixing the content within a list.
3. Indicate very clearly in the directions how the matching is to be done.
4. Arrange the premises and responses in a logical order.
5. Be sure to include responses that do not match any of the premises, responses that match more than one premise, or both.
6. Keep the list of premises and responses fairly short (about 10 items in each list).

Student Supplement 3

True-false

1. Write items that are true or false without additional qualifiers. Do not use true-false items where the item could be considered true (or false) under certain circumstances, unless the circumstances are identified in the statement.
2. Keep true-false statements short and confined to one idea.
3. Make sure that there is no pattern to your answers. Vary the amount and order of the true and false statements both within one test and across all tests.
4. Avoid the use of the following words in false statements as they may give the answer away to the student who does not know the correct response: only, never, all, every, always, no, and none.
5. Avoid the use of the following words in true statements as they may give the answer away to the student who does not know the correct response: usually, generally, sometimes, customarily, often, may, could, and frequently.

Short answer and essay

1. Be very clear in the question. Identify exactly what you want the student to respond to and in what type of detail. Do not ask broad, ambiguous questions.
2. Compile a list of exactly what is required in the student's answer. Write down all major and minor points that should be covered. Use this list in grading each answer.
3. If the purpose is to test what the student knows in relation to a performance objective, do not downgrade a paper for poor handwriting or spelling. If handwriting and/or spelling are part of the criteria for mastery as specified in the objective (as might be the case in filling out an order form) inform the student that they will be considered.

Completion

1. Design the question or statement so that there is only one correct answer.
2. Do not take statements or sentences directly from another source.
3. Do not break up a sentence by removing words and substituting blanks to the point where the meaning of the sentence is lost.

Student Supplement 3

4. Put the blank or blanks at the end rather than the beginning of a sentence.
5. Leave enough room for the student to write in the correct response.
6. Do not include unnecessary hints, such as the beginning letter of the missing word(s).
7. Always inform the student as to the units (inches, pounds, centimeters) in which the answer is to be expressed.

Implementing Criterion-Referenced Evaluation

Student Supplement 4—Guidelines for Developing Performance Tests

1. The test should assess the task as it is stated.

2. The actual behavior called for in the performance objective for a task should also be required for the performance test (sampling may be required).

3. If a process is critical to performing the task competently on the job, items must be included that assess how the student performs the task. Someone must actually observe the student, at least during the key steps.

4. If producing a completed product is important to be competent, product-related items must be included, and the finished product must be evaluated critically.

5. If process and product are important, include items to assess both.

6. The actual test items on the performance test should:

   a. Be sufficient to cover the major areas of competency in performing the task.

   b. Begin with a verb, be short and concise, and be ratable as yes or no.

   c. Be observable and objective.

7. Several evaluators using a well-developed performance test should rate a single student's performance very similarly.

8. You may want students to repeat the task several times, perhaps each time under different conditions or separated by time, or both.

9. Each student should be required to perform the task independently. Administering performance tests to groups only assesses the competence of the group.

Implementing Criterion-Referenced Evaluation

Assignment Sheet 1—Determine Methods to Use in Assessing Student Knowledge

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Part I:	
Appropriate method circled	______
Complete sentences were used	______
Logical explanations were stated	______

Part I—Selecting the best test method

Directions: Read each of the following performance objectives. Circle the method that would be most appropriate for assessing students according to the expected outcome described in the objective, then write a brief explanation for your answer on the blank lines provided.

Performance Objective 1: Given a diagram and description of a Super C engine, the student should identify the major clutch parts. The test must be completed with 100% accuracy.

A. Ask the student to list the major clutch parts on a Super C engine and answer using an essay test how they function.

B. Ask the students to draw a Super C engine and label the various parts.

C. Give the students a diagram of the Super C engine and ask the students to label the major clutch parts.

D. Ask the students to list the major clutch parts of the engine and look up the part numbers in a manual.

Explanation: ____

____

____

____

Assignment Sheet 1

Performance Objective 2: Given information from the "Exotica Plant Manual" on 15 foliage houseplants that are grown in the greenhouse, the student should identify the 15 plants by sight and list the environmental conditions required for the plants (including light, water, and temperature). Acceptable performance requires 90% accuracy.

A. Give the students an identification test using real plants and ask them to list the appropriate environmental conditions for the plants.

B. Give a matching, true-false, or multiple choice test to the students with the plant names and environmental conditions listed on the test.

C. Give the students a fill-in-the-blank or completion test. The questions would deal with the various plants and their environmental conditions.

D. Ask the students to look up the environmental conditions of the plants and write them down on paper.

Explanation: ____________________

Assignment Sheet 1

Evaluation criteria	**Rating**
Part II:	
Type(s) of tests were stated	_____
Logical discussion was written	_____
Complete sentences were used	_____

Part II—Determining appropriate test type.

Directions: Read the following case studies. Determine the type of test that would be appropriate in assessing the situation discussed in each case study, then, on the blanks provided, briefly explain why you chose that type of test.

Situation 1

A student was mixing a pesticide marked "CAUTION!" on the container and was not wearing gloves during the process. This is very poor practice and against safety rules for mixing pesticides. How should the teacher evaluate the student to determine if he or she is aware of the safety rules?

a. Type of test: ____

____

b. Explanation: ____

____

____

____

Assignment Sheet 1

Situation 2

A teacher complains to another teacher that the students do not seem to know the names of garden tools, especially the ones used for pruning and shearing trees and shrubs. They are always trying to use hand pruners and loppers for branches with over 1 inch calipers. How could this teacher determine whether the students know the proper names for the tools and their appropriate uses?

a. Type of test: ______________________________

____

b. Explanation: ______________________________

____

____

____

Implementing Criterion-Referenced Evaluation

Assignment Sheet 2—Develop a Performance Test

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
General requirements:	
Psychomotor task is appropriate for the objective	______
The evaluation device is appropriate (checklist, rating scale, or both)	______
The checklist:	
Space is provided for student's name, date, evaluator's name, etc.	______
Directions are clearly written	______
Items are clearly written and easy to interpret by student and teacher	______
Items are arranged in the sequence in which they are performed	______
All important steps of the process are included	______
All necessary columns for evaluation are provided	______
Space is provided for comments	______
The rating scale:	
Space is provided for student's name, date, evaluator's name, etc.	______
Directions are clearly written	______
Items are clearly written and easy to interpret by student and teacher	______
Rating scale contains appropriate choices for rating a student's work	______
Items are arranged in the proper sequence	______
All qualities of the product, as implied by the objective, are included	______
Space is provided for comments	______

Assignment Sheet 2

Introduction: When developing a performance test, you must first determine whether the process, product, or process/product component of a given task is more important. If the process is essential to a task, test items will be based on the procedural steps identified. If the product is critical, test items will describe desirable characteristics of the completed product.

Two common methods used to evaluate a student's performance are the checklist and the rating scale. A checklist is used to evaluate process and a rating scale is used to evaluate product. A checklist has a detailed list of steps that a student must follow in order to accomplish a task properly. It is used in an either/or situation where a teacher checks yes or no, adequate or inadequate, accomplished or not accomplished, acceptable or unacceptable, or some other similar designations. A rating scale is more appropriate for evaluating the quality of the work, which is a concern when assessing a final product.

Both the checklist and rating scale should contain explicit criteria for assessing student performance. When developing a checklist to assess student performance of a process, the following points should be considered:

1. Each item should be stated simply and clearly so that the student, teacher, and/or employer involved in the evaluation understands what is expected.

2. The items should be the important parts (critical steps) of the skill, not the trivial points that are common knowledge to the student.

3. The sequence of the items should be the same as the sequence of steps needed to complete the task.

4. Items that should be included on a checklist are:

   a. Student name
   b. Date of observation
   c. Name of evaluator and title
   d. Directions
   e. Title of task
   f. The list of items or steps that must be accomplished
   g. Columns for Yes/No, Accomplished/Not Accomplished, Acceptable/Unacceptable. An N/A column may be needed for a situation where an item may not apply.
   h. A section for comments about the work
   i. If students are to use the checklist, leave columns or a section for them to evaluate their work.
   j. If frequency or time taken to perform the task is important, a column needs to be provided for this information.

Assignment Sheet 2

Example:

Oxyacetylene Cutting

Performance Evaluation

Job Sheet 3—Make 90-Degree Cuts on Mild Steel and Restart a Cut

Student's Name____ Date ____________________

Evaluator's Name____ Attempt No. _______________

Instructions: When you believe you are ready to perform this task, ask your teacher to observe the procedure and complete this form. All items listed under "Process Evaluation" must receive a "Yes" for you to receive an overall performance evaluation.

Process Evaluation

Evaluator Note: Place a check (✓) in the "Yes" or "No" blanks to designate whether the student has satisfactorily achieved each step in this procedure. If the student is unable to achieve this competency, have the student review the materials and try again.

The student:		Yes	No
1.	Checked out proper tools and materials		
2.	Put on proper protective attire		
3.	Checked work area for hazards		
4.	Marked four parallel lines 2" apart on plate to be cut		
5.	Checked that eye protection has required lens for cutting		
6.	Checked position of catch box		
7.	Positioned/secured workpiece		
8.	Selected and installed cutting tip		
9.	Checked and cleaned tip as necessary		
10.	Adjusted oxygen pressure		
11.	Adjusted acetylene pressure		
12.	Ignited torch		
13.	Adjusted preheating flame		
14.	Depressed cutting oxygen valve and readjusted flame as needed		
15.	Closed cutting oxygen valve		
16.	Assumed a comfortable position		
17.	Placed hoses behind operator		
18.	Maneuvered torch with both hands		
19.	Positioned torch at edge of workpiece		
20.	Preheated metal to cutting temperature		
21.	Depressed cutting oxygen valve		
22.	Cut the metal		
23.	Cooled the metal		
24.	Restarted a cut at an edge where a previous cutting ended		
25.	Finished the cut		
26.	Inspected the cut		
27.	Shut down the equipment		
28.	Checked in/put away tools and materials		
29.	Cleaned the work area		
30.	Used proper tools correctly		
31.	Performed steps in a timely manner (______hrs. ______min. ______sec.)		
32.	Practiced safety rules throughout procedure		
33.	Provided satisfactory responses to questions asked		

Evaluator's Comments: ____

____

Assignment Sheet 2

When developing a rating scale to assess student performance of a product, the following points should be considered:

1. The items should include all the essential criteria necessary to have a satisfactory product.

2. The items should be broken into components that can be rated, such as the color, texture, appearance, and flavor of a baked cake.

3. Each component listed should be rated according to how close it comes to the criteria specified in the performance objective.

4. The overall scale should be clear, simple, and easy to use for the evaluator, and should provide a range of choices, such as very good, good, fair, poor, etc.

5. Items that should be included on a rating scale are:

    a. Student name
    b. Date of observation
    c. Evaluator's name and title
    d. Title of the product or task being evaluated
    e. Directions
    f. The list of items or components that will be rated
    g. A column for rating
    h. A section for comments
    i. If student is to rate the work, a column identical to the one that the evaluator will use.
    j. An N/A column for situations where a particular item may not apply to the rating.

Assignment Sheet 2

Example:

Product Evaluation

Evaluator Note: Rate the student on the following criteria by circling the appropriate numbers. Each item must be rated at least a "3" for mastery to be demonstrated. (See performance evaluation key below.) If the student is unable to demonstrate mastery, student materials should be reviewed and another product must be submitted for evaluation.

Criteria:

Cutting Line	4 Vertical, not pronounced	3 Uneven, wavy	2 Coarse	1 Deep gouges
Top Edge	4 Square, No melting	3 Irregular	2 Top edge melted	1 Top edge badly melted
Bottom Slag	4 No slag evident	3 Little slag evident	2 Some slag evident	1 Much slag evident

Evaluator's Comments: ______________________________

____

____

Performance Evaluation Key

4	-	Skilled—Can perform job with no additional training.
3	-	Moderately skilled—Has performed job during training program; limited additional training may be required.
2	-	Limited skill—Has performed job during training program; additional training is required to develop skill.
1	-	Unskilled—Is familiar with process, but is unable to perform job.

Evaluator Note: If an average score is needed to coincide with a competency profile, total designated points in "Product Evaluation" and divide by the total number of criteria.

One important consideration in preparing and implementing performance tests is the time involved for the teacher to administer them. Sometimes observing the performance of a small group of students may be possible if the work involved in not very complex. However, many times the teacher will have to administer the test to one student at a time. In the latter situation, preparing the area and materials that will be needed ahead of time will help make the test run smoothly and effectively. A conference should be arranged with each student on an individual basis to discuss observations and to help the student understand his or her progress and areas where improvement is needed. Allowing students to rate their own work and to compare their rating with that of the teacher may also be helpful. This would serve as another means of showing students what the teacher looks for and where improvement is needed.

Directions: Develop a performance test to assess the process/product for the job sheet printed on the following pages, and then complete the form for the performance evaluation that follows the job sheet.

Assignment Sheet 2

Establishing and Maintaining Turf
Unit 6

Job Sheet 3—Plant a Prepared Site by Sodding

A. Tools and materials

Sod
Power equipment—rollers, fork lift
Rakes
Hand roller
Hoes
Forks
Irrigation equipment
Wheelbarrows
Shovels
Spades
Trowels

B. Procedure

Note: Sod should be dense, uniform, and weed-free with no disease, insect, or nematode damage. Sod should be thick enough not to tear when held by one end.

1. Check soil for adequate moisture and correct if necessary.
2. Transport sod as close to planting site as possible.

   Note: Sod should be transplanted within 10 to 60 hours after cutting. Do not allow sod to dry out.

3. Place sod strips on planting bed snugly fitting end to end.
   a. It is helpful to place the first strips along a straight line such as a walk or set string line. Work toward the middle of the area.
   b. Place the sod so the crown is slightly lower than any surrounding drives, walks, or patios.
4. Place second row of sod strips in an alternate pattern fitting the sides snugly against the previous row but never overlapping the edges.

   Figure 1

   Illustration reprinted with permission of Ortho Books, ©1981.

   Caution: Do not stretch the strips while placing them on the bed. The sod will shrink, causing cracks between strips, and allowing the edges to dry out.

5. Trim outside edges to conform with desired planting design.
6. Roll sod perpendicular to the direction the strips were placed to ensure good contact with soil.
7. Water sod area immediately after rolling.

   Note: Large planting areas should be planted in sections to allow sod to be watered in quickly.

8. Clean area and dispose of debris.
9. Clean and return tools and materials to correct areas.

Assignment Sheet 2

Establishing and Maintaining Turf
Unit 6

Performance Evaluation
Job Sheet 3—Plant a Prepared Site by Sodding

Student's Name ______________________________ Date ______________

Evaluator's Name ______________________________ Attempt. No. ________

Instructions: When you are ready to perform this task, ask your teacher to observe the procedure and complete this form. All items listed under "Process Evaluation" must receive a "Yes" for you to receive an overall performance evaluation.

Process Evaluation

Evaluator Note: Place a check mark in the "Yes" or "No" blanks to designate whether or not the student has satisfactorily achieved each step in this procedure. If the student is unable to achieve this competency, have the student review the materials and try again.

The student:	Yes	No
	______	______
	______	______
	______	______
	______	______
	______	______
	______	______
	______	______
	______	______

Evaluator's Comments: ____

____

Assignment Sheet 2

Job Sheet 3 Performance Evaluation

Product Evaluation

Evaluator Note: Rate the student on the following criteria by circling the appropriate numbers. Each item must be rated at least a "3" for mastery to be demonstrated. (See performance evaluation key below.) If the student is unable to demonstrate mastery, student materials should be reviewed and another product must be submitted for evaluation.

Criteria:

	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1
	4	3	2	1

Evaluator's Comments: ______________________________

____

____

Performance Evaluation Key

4 - Skilled—Can perform job with no additional training.
3 - Moderately skilled—Has performed job during training program; limited additional training may be required.
2 - Limited skill—Has performed job during training program; additional training is required to develop skill.
1 - Unskilled—Is familiar with process, but is unable to perform job.

Evaluator Note: If an average score is needed to coincide with a competency profile, total designated points in "Product Evaluation" and divide by the total number of criteria.

Implementing Criterion-Referenced Evaluation

Assignment Sheet 3—Develop an Instrument to Assess Student Attitudes

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
There is space for student's name, date, and evaluator's name	______
Directions or ratings are clearly defined or described	______
All items are stated at the comprehension level of the student	______
Items or problems are stated so that they will reveal that the student is progressing toward achieving the objective	______
Items (or checklist or rating scale) are in a logical sequence	______
Acceptable responses are identified	______
Points to be given for acceptable responses are specified	______
For an oral or essay exam—item does not require a simple "yes" or "no" answer	______
Appropriate rating is used	______

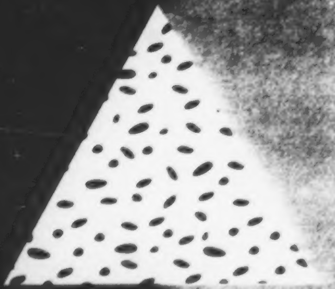
Introduction: The affective domain of learning deals with student attitudes, beliefs, feelings, and values. Teachers should include instruction that helps students develop a set of attitudes and work values to become competent workers.

Directions: Develop an instrument (checklist, rating scale, questionnaire, problem-solving item, etc.) to assess student achievement of the following objective: The student should demonstrate a responsible attitude toward safety precautions and regulations when performing tasks in the laboratory.

Use the back of this page for your assessment instrument. Use the evaluation criteria to evaluate the instrument.

Competency-Based Education

Developing Components of a Unit of Instruction



Developing Components of a Unit of Instruction is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and the written test, a written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Developing Components of a Unit of Instruction

Objective Sheet

Unit Objective

After completing this unit, the student should be able to develop and evaluate components of a unit of instruction. The student should demonstrate these competencies by completing the assignment sheets and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to developing components of a unit of instruction with their correct definitions.
2. Define competency-based education.
3. Explain the process used in developing units of instruction.
4. Select true statements concerning copyright laws and how they pertain to instructional development.
5. Explain the procedure for securing copyright permission.
6. Match components of a unit of instruction with their descriptions.
7. Select true statements concerning the procedure for evaluating components of a unit of instruction.
8. Select components of a performance objective. (Assignment Sheet 1)
9. Distinguish among domains of the Taxonomy of Educational Objectives.
10. Distinguish between performance and nonperformance objectives. (Assignment Sheet 2)
11. Convert nonperformance objectives to performance objectives. (Assignment Sheet 3)
12. Write objectives for a unit of instruction. (Assignment Sheet 4)
13. Develop an information sheet. (Assignment Sheet 5)
14. Design a transparency master, teacher supplement, or student supplement. (Assignment Sheet 6)

Objective Sheet

15. Develop an assignment sheet and answers to assignment sheet. (Assignment Sheet 7)
16. Develop a job sheet. (Assignment Sheet 8)
17. Write test items and answers to test items. (Assignment Sheet 9)
18. Prepare a unit evaluation form. (Assignment Sheet 10)
19. Prepare a suggested activities sheet. (Assignment Sheet 11)
20. Evaluate components of a unit of instruction. (Assignment Sheet 12)

Developing Components of a Unit of Instruction

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.

2. Review Teaching Suggestions section that follows. Plan for classroom activities.

3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.

4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.

5. Make transparencies from transparency masters included with this unit. These appear in the teacher guide only and are designed to be used with the following objectives:

   TM 1—Components of a Unit of Instruction (Objective 6)
   TM 2—Example of a Job Sheet (Objective 6)
   TM 3—Components of a Performance Objective (Objective 8)
   TM 4—Taxonomy of the Cognitive Domain (Objective 9)

6. Make copies of any handouts that you plan to distribute to students.

7. Review instructions for evaluating student performance, and make copies of the Unit Evaluation Form.

Delivery and Application

8. Provide students with unit of instruction.

9. Discuss unit and specific objectives.

10. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.

11. Discuss the assignment sheets. Review criteria for evaluation of these activities.

Suggested Activities

Evaluation

12. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

13. Make copies of the written test. Add or modify test items as needed.

14. Give written test.

15. Compile assignment sheet ratings and written test scores on the Unit Evaluation Form. Include any additional assignments.

16. Reteach and retest as required.

Teaching Suggestions

1. Introduce the unit by discussing the importance of developing relevant, well-written, and well-organized units of instruction.

2. Explain the terminology provided in objectives 1 and 2 on the information sheet.

3. Explain the process used in developing components of a unit of instruction.

4. Discuss how existing units of instruction can be adapted to meet the specific needs of the teacher/student.

5. Discuss copyright laws and how they pertain to instructional development. Make copies of Teacher Supplement 1 and distribute to students.

6. Explain the procedure for securing copyright permission. Refer students to Student Supplement 1 for examples of copyright request letters.

7. Have students write a letter requesting copyright permission for artwork to be used in their unit of instruction.

8. Use Transparency 1 to discuss components of a unit of instruction and their uses. Relate to unit, "Developing Components of a Unit of Instruction". Use Transparency 2 to show an example of a job sheet.

9. Collect examples of performance objectives, then make transparency of examples for class discussion.

10. Use Transparency 3 to discuss components of a performance objective. Following discussion, have students complete Assignment Sheet 1. This may be done individually or as a group activity.

Suggested Activities

11. Have students complete Assignment Sheet 2, then have them discuss why or why not each statement is a performance objective.

12. Use Transparency 4 to discuss the cognitive domain in the Taxonomy of Educational Objectives (Objective 9).

13. Refer students to Student Supplements 2-4 to assist them in writing objectives in Assignment Sheet 4.

14. Have students complete Assignment Sheet 3 for practice in writing performance objectives. Give students an opportunity to share their converted objectives with class.

15. Assist students in selecting a topic or concept to be used in developing their components of a unit of instruction.

16. Provide students with examples of instructional materials which have been developed for a variety of programs to assist them in developing their components. Students may also use this unit of instruction as a guide.

17. Explain the order in which components are written, the writing process, and how components relate to each other.

18. Provide style sheet to assist students in developing components of a unit of instruction.

19. Show students how to use the style sheet and evaluation criteria provided in objective 7 to assist them in completing Assignment Sheets 4-11.

20. Refer students to Assignment Sheet 12 to assist them in evaluating their completed components. Assist them in the evaluation process and indicate to them possible area for improvement.

21. Provide students with an opportunity to share their feelings/thoughts about the development process. For instance, they can discuss components that they found easy/difficult to develop, or they can share ideas for supplements, assignment/job sheets, and teaching suggestions. Use this activity to summarize unit content.

Resources Used in Developing This Unit

1. *Developing a Unit of Instruction.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1985.

2. Gronlund, Norman E. *Stating Behavioral Objectives for Classroom Instruction.* New York: The Macmillan Company.

Suggested Activities

3. Kozak, Ellen M. *Every Writer's Guide to Copyright and Publishing Law.* New York: Henry Holt and Company, 1990.
4. Mager, Robert F. *Preparing Instructional Objectives.* Belmont, CA: Fearon Publishers, 1975.
5. McAshan, H.H. *Writing Behavioral Objectives.* New York: Harper and Row.
6. Popham, W. James and Eva L. Baker. *Systematic Instruction.* Englewood Cliffs, NJ: Prentice-Hall Inc.
7. Walbesser, Henry H., Edwin B. Kurtz, Larry D. Goss, and Richard M. Robl. *Constructing Instruction Based on Behavioral Objectives.*

Suggested Supplemental Resources

1. *MAVCC Style Sheet.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1991.
2. *Writing Performance Objectives.* Stillwater, OK: Mid-America Vocational Curriculum Consortium, 1992.
3. Copyright information kits. Available from:

Copyright Office
Library of Congress
Washington, DC 20559
Phone: (202) 707-9100

Kits and their corresponding numbers include:

Books	109
Cartoons	111
Computer Programs	113
Copyright Searches	116
Fair Use	102
Games	108
Motion Pictures	110
Music	105
Photographs	107
Visual Arts	115

Suggested Activities

4. Other competency-based units of instruction which may be found in a variety of instructional manuals/guides. Some sources of competency-based materials include the following:

    a. Mid-America Vocational Curriculum Consortium
    Oklahoma Department of Vocational and Technical Education
    1500 West Seventh Avenue
    Stillwater, OK 74074-4364
    Phone: (800) 654-3988

    b. Instructional Materials Laboratory
    London Hall
    University of Missouri-Columbia
    Columbia, MO 65211
    Phone: (314) 882-2883

    c. Curriculum and Instructional Materials Center
    Oklahoma Department of Vocational and Technical Education
    1500 West Seventh Avenue
    Stillwater, OK 74074-4364
    Phone: (800) 654-4502

    d. Educational Development and Training Center
    East Texas State University
    E.T. Station
    Commerce, TX 75428
    Phone: (214) 886-5623

    Note: Check with your state resource center for other sources.

Developing Components of a Unit of Instruction

Answers to Assignment Sheets

Assignment Sheet 1

1. Underline — Student
   Circle — Identify
   Box — Eighty-five percent accuracy

2. Underline — Student
   Circle — Type
   Box — Forty words per minute with no errors

3. Underline — Student
   Circle — Calculate
   Box — Ninety-five percent accuracy

4. Underline — Student
   Circle — Adjust
   Box — According to manufacturer's specifications

5. Underline — Student
   Circle — Define
   Box — Eighty-five percent accuracy

6. Underline — Student
   Circle — Wire
   Box — According to the specification of the National Electric Code

7. Underline — Student
   Circle — Construct
   Box — According to the criteria listed on the assignment sheet

8. Underline — Student
   Circle — Distinguish
   Box — Eighty-five percent accuracy

9. Underline — Student
   Circle — Transcribe
   Box — No more than three errors

10. Underline — Student
    Circle — Select
    Box — Ninety percent accuracy

Answers to Assignment Sheets

Assignment Sheet 2

Circled numbers should include the following: 2, 4, 5, 9, and 10. These statements describe observable student behavior.

Assignment Sheet 3

Note: There will be several ways to convert the nonperformance objectives to performance objectives depending on the behavior and criteria expected of the student. An example of a performance objective is provided for each statement on the assignment sheet.

1. After completing this unit, the student should be able to interpret Ohm's law as related to electricity with 85 percent accuracy.
2. After completing this unit, the student should be able to convert common fractions to decimals with 100 percent accuracy.
3. After completing this unit, the student should be able to distinguish between performance objectives and nonperformance objectives with 100% accuracy.
4. After completing this unit, the student should be able to state the chemical formula for water with 100 percent accuracy.
5. After completing this unit, the student should be able to arrange in order the steps in solving a mathematical equation with 100% accuracy.
6. After completing this unit, the student should be able to read and outline the major points of a poem within thirty minutes with 100 percent accuracy

Assignment Sheet 4

Part A: Unit objectives will vary by subject matter, but should include the three components of a performance objective ("Who," "What," and "How Much") and be written in a clear, concise manner.

Part B: Specific objectives will vary, but should begin with an appropriate performance term (action verb) and be written in a clear, concise manner.

Assignment Sheets 5-12 — Student performance will be evaluated according to criteria listed for each assignment sheet.

Developing Components of a Unit of Instruction

Answers to Written Test

1.
   a. 7
   b. 3
   c. 5
   d. 2
   e. 8
   f. 10
   g. 1
   h. 4
   i. 9
   j. 6

2. Definition may be in student's own words, but should include major points from the following: A methodology of instruction that (a) identifies the cognitive, psychomotor, and affective skills needed to meet a specified standard; (b) informs students and teachers of the precise and detailed learning objectives required to achieve performance; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by allowing each student to master the task through flexibility in learning time and methods.

3. Explanation may be in student's own words, but should address points from the following:

   a. Determine need.

   b. Establish a technical committee for area of need.

   c. Complete instructional/task analysis.

   d. Identify units of instruction to be written.

   e. Complete publication outline.

   f. Research and compile information needed to write a unit of instruction.

   g. Write unit of instruction.

   h. Identify illustrations needed in unit of instruction, and obtain copyright permission, if needed.

   i. Input unit of instruction.

   j. Edit unit of instruction.

   k. Validate units of instruction by obtaining input from technical advisory committee.

   l. Make any necessary changes or corrections per committee input.

Answers to Written Test

m. Complete final reading by author and/or editor.

n. Print teacher and student materials.

o. Disseminate materials.

4. a, d, g

5. Explanation may be in student's own words, but should address key points from the following:

   a. Identify all copy and/or artwork which has been borrowed from another source.

   b. Make sure source used is the most current and presents up-to-date artwork and/or information about subject.

   c. Mark appropriate pages in source with tabs, and indicate unit and component in which materials are to be used.

   d. Develop a master list of resources for each unit to use in writing permission letters and developing the reference list included in each unit of instruction.

   e. Prepare and send letters to publishers/corporations requesting copyright permission. Attach artwork which depicts how items will be used if permission is granted.

   f. When permission is granted, set appropriate credit line and add to final artwork/copy.

   g. File all copyright permission letters in a folder designating project title, and keep for an indefinite period of time so these can be referred to at a later date, if needed.

6.

a.	8	e.	12	i.	2
b.	9	f.	3,4	j.	5
c.	10	g.	11	k.	7
d.	6	h.	1		

7. b, d, f, g

8. Underline — Student
   Circle — Record
   Box — 100% accuracy

9. a. P
   b. A
   c. C

Developing Components of a Unit of Instruction

Written Test

Name ______________________________ Score ______________

1. Match the terms on the right with their correct definitions by writing the corresponding numbers on the blanks provided.

______a. System of classifying objectives into types or levels

______b. Identification of sequence and strategies for instruction

______c. Objective stating performance required of a student in order to reach intended outcome for a unit of instruction

______d. A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

______e. A group of subject matter experts from business/industry/labor and education who identify, then verify content of materials produced during development process

______f. Statement of the intended purpose (overall behavioral outcome) expected of each student after completion of a unit of instruction

______g. A learned behavior which can be repeated to a predetermined standard

______h. A statement of what the learner must do in observable and measurable terms

______i. Materials and/or information necessary for one or more instructional periods for the teaching/learning process in order to reach the unit objective

______j. The identification of cognitive, psychomotor, and affective skills needed to perform a specific task

1. Competency
2. Evaluation
3. Instructional analysis
4. Performance objective
5. Specific objective
6. Task analysis
7. Taxonomy
8. Technical committee
9. Unit of instruction
10. Unit objective

Written Test

2. Define competency-based education. Write the definition on the blanks provided.

3. Explain the process used in developing units of instruction. Write your answer on the blanks provided.

Written Test

4. Select true statements concerning copyright laws and how they pertain to instructional development by writing an "X" on the blank before each true statement.

______a. Copyright is a form of protection provided by laws of the United States to authors of "original works" such as written materials, computer software, and videotapes.

______b. Copyright protection begins from the time the work is created by a group of specialists in the related field.

______c. Acknowledging the source of copyrighted material substitutes for obtaining copyright permission.

______d. Altering artwork or written material does not protect user from copyright laws.

______e. Educators and educational agencies/organizations can claim exemption from copyright laws.

______f. Violation of copyright laws may result in imprisonment and a fine of thousands of dollars.

______g. When preparing instructional materials, source of information and/or artwork should be identified and written approval to reproduce copyrighted material should be obtained prior to printing.

5. Explain the procedure for securing copyright permission. Write your answer on the blanks provided.

____

____

____

____

____

____

____

____

____

Written Test

6. Match the components of a unit of instruction on the right with their correct descriptions by writing the corresponding numbers on the blanks provided.

Note: Some descriptions may have more than one answer.

______a. Provides illustrations, charts, schematics, etc. needed by a teacher to clarify and reinforce objectives outlined in the information sheet

______b. Presents cognitive information in sentence or outline form which enables a student to reach the unit and specific objectives

______c. Provides additional, relevant information needed by student to complete assignment sheets or job sheets

______d. Assists teacher in compiling assignment sheet ratings, job sheet ratings, and written test scores for each student

______e. Provides criteria to objectively evaluate student performance, provide a list of required tools and materials, and describe a step-by-step procedure for performing hands-on activities

______f. Provide possible or specific answers to assist teacher with evaluation and accountability

______g. Provides pencil and paper activities that give students the opportunity to make practical applications of items in the information sheet

______h. States the performance students are expected to achieve after completion of the unit of instruction

1. Objective sheet
2. Suggested activities sheet
3. Answers to assignment sheets
4. Answers to written test
5. Written test
6. Unit evaluation form
7. Teacher supplement
8. Transparency master
9. Information sheet
10. Student supplement
11. Assignment sheet
12. Job sheet

______i. Assists teacher during preparation stage of teaching/learning process by suggesting various types of activities and by listing available references/resource materials

______j. Measures a student's proficiency against a predetermined set of objectives (criteria) which have been covered in the information sheet

______k. Provides additional teaching aids to reinforce teaching/learning process

7. Select true statements concerning the procedure for evaluating components of a unit of instruction by writing an "X" on the blank before each true statement.

______a. Arrange components of a unit of instruction in random sequence.

______b. Check objective sheet for clear and concise objectives.

______c. Review the information sheet to check that "nice to know" information is included in the objectives.

______d. Review assignment sheets to ensure that activities reflect skills necessary for employment/course completion.

______e. Review job sheets to ensure that criteria have been listed and are subjective.

______f. Check written test to see if it fairly reflects the knowledge the student should have concerning each objective.

______g. Check transparency masters to make sure they agree with and support the objectives presented in the information sheet.

______h. Review teacher and student supplements to make sure they provide additional information or activities in case the student finishes the unit ahead of schedule.

8. Select components of the performance objective given below by underlining the exhibitor of performance, circling the behavior or action the learner is expected to exhibit, and boxing in the minimum level of acceptable response.

The student should be able to record the correct zip code for ten addresses with 100% accuracy.

Written Test

9. Distinguish among domains of the Taxonomy of Educational Objectives by placing a "C" for cognitive, a "P" for psychomotor, and an "A" for affective on the blank before the correct description.

   _______a. Deals with the physical responses of the learner and the development of manipulative skills

   _______b. Deals with changes in interest, attitudes, and values and the development of appreciations and social-emotional adjustments

   _______c. Deals with recall or recognition of knowledge and the development of intellectual abilities and skills

***Permission to duplicate this test is granted.**

Developing Components of a Unit of Instruction

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Select Components of a Performance Objective Rating ______

Comments: ____

____

Assignment Sheet 2—Distinguish Between Performance and Nonperformance Objectives Rating ______

Comments: ____

____

Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives Rating ______

Comments: ____

____

Assignment Sheet 4—Write Objectives for a Unit of Instruction Rating ______

Comments: ____

____

Assignment Sheet 5—Develop an Information Sheet Rating ______

Comments: ____

____

Assignment Sheet 6—Design a Transparency Master, Teacher Supplement, or Student Supplement Rating ______

Comments: ____

____

Assignment Sheet 7—Develop an Assignment Sheet and Answers to Assignment Sheet Rating ______

Comments: ____

____

Unit Evaluation Form

Assignment Sheet 8—Develop a Job Sheet Rating ______

Comments: ______________________________

Assignment Sheet 9—Write Test Items and Answers to Test Items Rating ______

Comments: ______________________________

Assignment Sheet 10—Prepare a Unit Evaluation Form Rating ______

Comments: ______________________________

Assignment Sheet 11—Prepare a Suggested Activities Sheet Rating ______

Comments: ______________________________

Assignment Sheet 12—Evaluate Components of a Unit of Instruction Rating ______

Comments: ______________________________

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ______________________________

Teacher Signature ______________________ Date __________

Student Signature ______________________ Date __________

***Permission to duplicate this form is granted.**

450

Developing Components of a Unit of Instruction

Learning Steps

Name ____

Check the following blanks as you complete each step.

_______ 1. **Read** Unit and Specific Objectives.

_______ 2. **Study** Information Sheets, Objectives 1 through 7, pp. 3-10.

_______ 3. **Review** Student Supplement 1, pp. 11 and 12; Student Supplement 5, pp. 19 and 20; and Assignment Sheet 12, pp. 47-54.

Note: Upon completion of Assignment Sheets 4-11, evaluate components of a unit of instruction using either Student Supplement 5 or Assignment Sheet 12.

_______ 4. **Study** Information Sheet, Objective 8, p. 10.

_______ 5. **Do** Assignment Sheet 1—Select Components of a Performance Objective, p. 21.

_______ 6. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 7. If evaluation is not satisfactory, repeat steps 4 and 5.

_______ 7. **Study** Information Sheet, Objective 9, p. 10 and Student Supplements 2 through 4, pp. 13-17.

_______ 8. **Do** Assignment Sheet 2—Distinguish Between Performance and Nonperformance Objecitves, p. 23, and Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives, pp. 25-27.

_______ 9. **Stop** Ask teacher to evaluate completed assignment sheets. If evaluation is satisfactory, continue to step 10. If evaluation is not satisfactory, repeat steps 7 and 8.

_______ 10. **Do** Assignment Sheet 4—Write Objectives for a Unit of Instruction, pp. 29-31.

Note: Refer to Assignment Sheet 12 for criteria for performance objectives. Use objectives from this assignment sheet to develop other components of a unit of instruction.

Learning Steps

______11. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 12. If evaluation is not satisfactory, repeat step 10.

______12. **Do** Assignment Sheet 5—Develop an Information Sheet, p. 33.

______13. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 14. If evaluation is not satisfactory, repeat step 12.

______14. **Do** Assignment Sheet 6—Design a Transparency Master, Teacher Supplement, or Student Supplement, pp. 35 and 36.

______15. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 16. If evaluation is not satisfactory, repeat step 14.

______16. **Do** Assignment Sheet 7—Develop an Assignment Sheet and Answers to Assignment Sheet, pp. 37 and 38.

______17. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 18. If evaluation is not satisfactory, repeat step 16.

______18. **Do** Assignment Sheet 8—Develop a Job Sheet, p. 39.

______19. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 20. If evaluation is not satisfactory, repeat step 18.

______20. **Do** Assignment Sheet 9—Write Test Items and Answers to Test Items, pp. 41 and 42.

______21. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 22. If evaluation is not satisfactory, repeat step 20.

______22. **Do** Assignment Sheet 10—Prepare a Unit Evaluation Form, p. 43.

______23. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 24. If evaluation is not satisfactory, repeat step 22.

______24. **Do** Assignment Sheet 11—Prepare a Suggested Activities Sheet, pp. 45 and 46.

Learning Steps

______25. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 26. If evaluation is not satisfactory, repeat step 24.

______26. **Do** Assignment Sheet 12—Evaluate Components of a Unit of Instruction, pp. 47-54.

______27. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 28. If evaluation is not satisfactory, repeat step 26.

______28. **Take** Written Test (See teacher). If you score 85 percent or above, continue to step 29. If you do not socre 85 percent or above, ask your teacker for directions and/or other areas of study.

______29. **Sign** Unit Evaluation Form to verify ratings received on assignment sheets and written test.

***Permission to duplicate this form is granted.**

Developing Components of a Unit of Instruction

Teacher Supplement 1—Utilization of Copyrighted Materials

When developing instructional materials it is important for the writer to provide accurate information and artwork which reflect current industry needs. And, it is critical to obtain copyright permission to reproduce the selected information and/or artwork.

To better understand the importance of requesting and obtaining copyright permission, let us take a closer look at copyright laws.

- The Copyright Law of 1909 governs a work first published before Januray 1, 1978.
- The Copyright Act of 1976 (in its original form) governs a work first published between January 1, 1978, and March 1, 1989.
- The Copyright Act of 1976 (as modified by the Berne Convention for the Protection of Literary and Artistic Works) governs a work first published after March 1, 1989.

In accordance with these laws of the United States, copyright protection is provided to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works.

Copyright protection begins from the time the work is created in "fixed" form. It is illegal for anyone to violate any of the rights provided to the owner of copyright by the laws. Anyone suspected of violating the law may be sued by the author/owner, and, if found guilty of copyright infringement, all materials containing the copyrighted materials could be ordered destroyed, and the violator could be fined thousands of dollars for damages.

Writers are liable if they have not identified all copyrighted materials, or if they have attempted to pass the work off as their own. Acknowledging the source of the copyright material does not substitute for obtaining permission. The safest course is always to get written copyright permission from the copyright owner before using copyrighted material.

Educational agencies/organizations cannot claim exemption from copyright laws. According to Section 107 of the copyright law which deals with "fair use" of copyrighted materials for educational purposes, there are four factors which must be considered in determining whether or not a particular use if fair. These are: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.

Teacher Supplement 1

Another consideration when working with various resources is the ability to identify copyrightable works and uncopyrightable works of industrial design, or "useful articles." Examples of useful articles include tape measures, rulers, standard charts, and tables consisting of common knowledge. These items are not protected by copyright law, even if they appear in a copyrighted publication, but the way that they are expressed or described is protected.

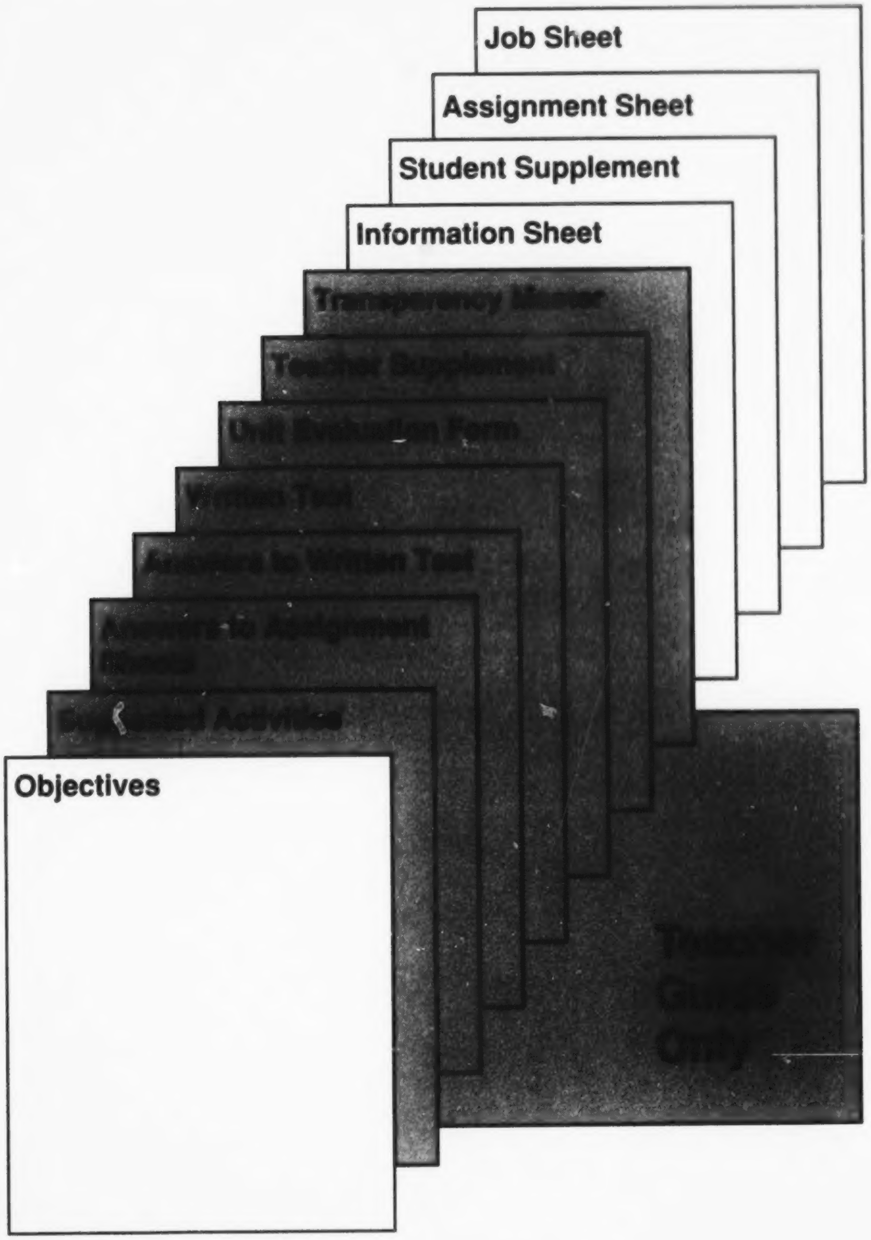
Ownership of resources may belong to either the author or his/her publisher. It is important to note who has the copyright on any materials which you wish to borrow from. For instance, MAVCC publications are copyrighted and belong exclusively to the organization, since the writer (author) has been hired specifically to develop the instructional materials. It may be necessary to contact the publisher first to determine ownership of the requested material.

Permission to reproduce copy or artwork is generally given if a credit line is displayed or a nominal fee is paid. However, in the case of major publishers, it may become increasingly difficult to obtain copyright permission. If permission is denied, locate new artwork or omit artwork from the page.

Although requesting copyright permission is sometimes very time-consuming, remember the possible consequences if one is found guilty of copyright infringement. It could be your reputation and money at stake.

***Permission to duplicate this supplement is granted.**

Components of a Unit of Instruction


Job Sheet
Assignment Sheet
Student Supplement
Information Sheet
Transparency Master
Teacher Supplement
Unit Evaluation Form
Written Test
Answers to Written Test
Answers to Assignment Sheets
Suggested Activities
Objectives
Teacher Guide Only

Example of a Job Sheet

Irrigation Design and Installation
Unit 3

Job Sheet 2—Use a Flow Gauge

Name ______________________ Attempt Number ________

Date ______________________ Overall Rating ________

Evaluation criteria	**Rating**
Read the correct gallons per minute on the dial	______

Instruction: When you are ready to perform this task, ask your instructor to observe the procedure and rate your performance using the evaluation criteria.

A. Tools and materials

Flow gauge
Fittings necessary to connect to gauge
Water source

B. Procedure

☐ 1. Observe safety rules throughout this procedure.

☐ 2. Check out proper tools and materials.

☐ 3. Connect flow gauge to water source using any necessary fittings.

☐ 4. Turn water on.

☐ 5. Read gallons per minute (GPM) on dial — This is the gallons per minute that flows out of the water source at maximum pressure.

☐ 6. Return tools and materials to proper storage.

☐ 7. Clean the work area.

Evaluator's comments: ____

____

____

Components of a Performance Objective

1. Who is to exhibit the behavior?
2. What observable performance (action) is the learner expected to exhibit?
3. What responses (standards) are acceptable?

After completing this unit, the student should be able to solve story problems which involve addition of one-digit, two-digit, and three-digit numbers with 85% accuracy.

After completing this unit, the student should be able to plan nutritionally sound menus with 90 percent accuracy.

1. Who exhibits behavior?
2. What observable performance?
3. What responses (standards) are acceptable?

Taxonomy of the Cognitive Domain

EVALUATION
(Judge, Rate, Select, Assess, Estimate)

⇧

SYNTHESIS
(Compose, Develop, Collect, Create, Prepare)

⇧

ANALYSIS
(Differentiate, Compare, Examine, Survey, Dissect)

⇧

APPLICATION
(Apply, Use, Interpret, Calculate, Demonstrate)

⇧

COMPREHENSION
(Discuss, Describe, Explain, Identify, Restate)

⇧

KNOWLEDGE
(List, Name, Define, State, Record)

Developing Components of a Unit of Instruction

Information Sheet

1. **Terms and definitions**

   a. **Competency** — A learned behavior which can be repeated to a predetermined standard

   b. **Evaluation** — A process by which information is gathered about the effectiveness of the teaching/learning process and the achievement of objectives

   Note: An evaluation activity may be verbal, nonverbal, manipulative, or any type of performance, provided it is appropriate for measuring student performance.

   c. **Instructional analysis** — Identification of sequence and strategies for instructions

   Note: This may also be referred to as school housing and scope and sequence.

   d. **Performance objective** — A statement of what the learner must do in observable and measurable terms

   Note: Performance objectives are sometimes referred to as behavioral objectives.

   e. **Specific objective** — Objective stating performance required of a student in order to reach intended outcome for a unit of instruction

   Note: Specific objectives may also be referred to as interim, enabling, subordinate, subobjective, and enroute objectives.

   f. **Task analysis** — The identification of cognitive, psychomotor, and affective skills needed to perform a specific task

   g. **Taxonomy** — System of classifying objectives into types or levels

   Examples: Bloom's Taxonomy, Snyder's Taxonomy

   h. **Technical committee** — A group of subject matter experts from business/industry/labor and education who identify, then verify content of materials produced during development process

   i. **Unit objective** — Statement of the intended purpose (overall behavioral outcome) expected of each student after completion of a unit of instruction

   j. **Unit of instruction** — Materials and/or information necessary for one or more instructional periods for the teaching/learning process in order to reach the unit objective

Information Sheet

2. **Definition of competency-based education (CBE)** — A methodology of instruction that (a) identifies the cognitive, psychomotor, and affective skills needed to meet a specified standard; (b) informs students and teachers of the precise and detailed learning objectives required to achieve performance; (c) emphasizes performance standards in testing, course requirements, and/or graduation; and (d) facilitates learning by allowing each student to master the task through flexibility in learning time and methods.

3. **Process used in developing units of instruction**

   a. Determine need.

   b. Establish a technical committee for area of need.

   Note: This committee should largely consist of business, industry, and labor representatives with support from teachers, teacher educators, and state supervisory staff.

   c. Complete instructional/task analysis.

   Note: Obtain examples of existing task analyses, if available, to assist technical committee.

   d. Identify units of instruction to be written.

   e. Complete publication outline.

   f. Research and compile information needed to write a unit of instruction.

   g. Write unit of instruction.

   h. Identify illustrations needed in unit of instruction, and obtain copyright permission, if needed.

   i. Input unit of instruction.

   j. Edit unit of instruction.

   k. Validate units of instruction by obtaining input from technical advisory committee.

   l. Make any necessary changes or corrections per committee input.

   m. Complete final reading by author and/or editor.

   n. Print teacher and student materials.

   o. Disseminate materials.

   Note: Provide in-service instruction about the use of the curriculum materials.

Information Sheet

4. Copyright laws and how they pertain to instructional development

a. Copyright is a form of protection provided by laws of the United States to authors of "original works" such as written materials, computer software, and videotapes.

b. Copyright protection begins from the time the work is created.

c. Acknowledging the source of copyrighted material does not substitute for obtaining copyright permission.

d. Altering artwork or written material does not protect user from copyright laws.

e. Educators and educational agencies/organizations cannot claim exemption from copyright laws.

f. Violation of copyright laws may result in:

- Destruction of materials containing copyrighted materials
- Fine of thousands of dollars for damages
- Loss of reputation

Note: The safest course of action is always to get copyright permission from owner before using copyrighted materials.

g. When preparing instructional materials, source of information and/or artwork should be identified, and written approval to reproduce copyrighted material should be obtained prior to printing.

Information Sheet

5. Procedure for securing copyright permission

a. Identify all copy and/or artwork which has been borrowed from another source. Include the following information:

Source/Title:
Author:
Copyright Date:
Publisher:
Publisher Address/Location:
Page and Figure Number:

b. Make sure source used is the most current and presents up-to-date artwork and/or information about subject.

Note: It may be necessary to check with resource library to see if a more recent edition has been published.

c. Mark appropriate pages in source with tabs, and indicate unit and component in which materials are to be used.

Note: If changes are needed, it may be necessary to make a xerox copy. However, the original source art should be available for reproduction, and permission must still be obtained.

d. Develop a master list of resources for each unit to use in writing permission letters and developing the reference list included in each unit of instruction.

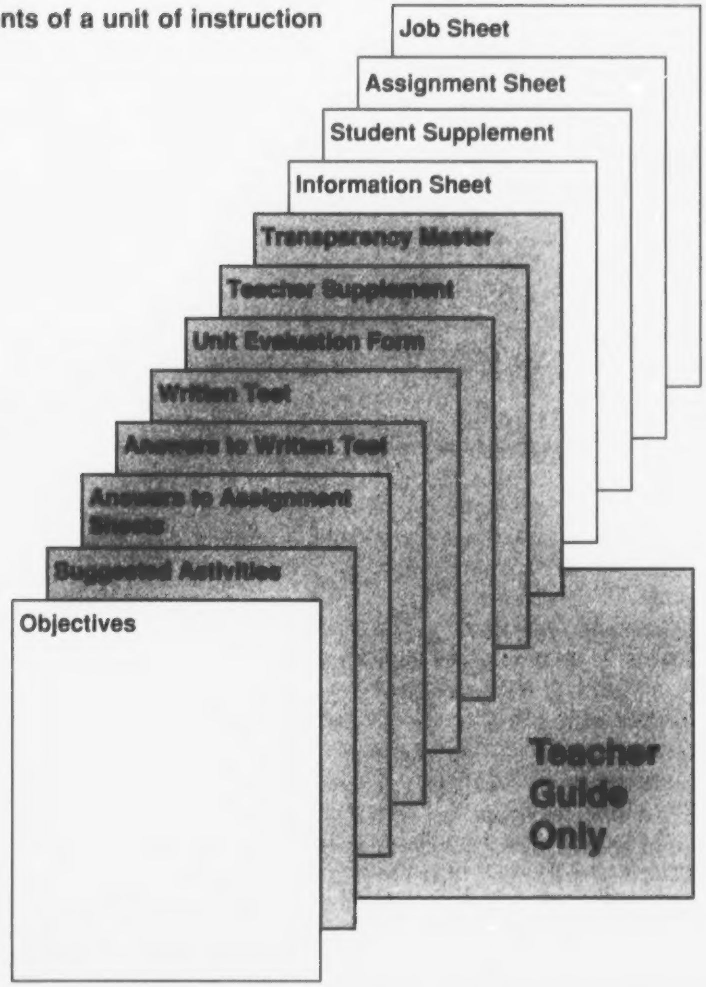
e. Prepare and send letters to publishers/corporations requesting copyright permission. Attach artwork which depicts how items will be used if permission is granted.

f. When permission is granted, set appropriate credit line and add to final artwork/copy.

g. File all copyright permission letters in a folder designating project title, and keep for an indefinite period of time so these can be referred to at a later date, if needed.

Information Sheet

6. **Components of a unit of instruction**


Job Sheet
Assignment Sheet
Student Supplement
Information Sheet
Transparency Master
Teacher Supplement
Unit Evaluation Form
Written Test
Answers to Written Test
Answers to Assignment Sheets
Suggested Activities
Objectives
Teacher Guide Only

Note: Not all components are included in every unit of instruction. Those starred are used as needed.

a. **Objective sheet** — States the performance students are expected to achieve after completion of the unit of instruction

Note: Both the unit and specific objectives are included on this sheet.

b. **Suggested activities sheet** — Assists teacher during preparation stage of teaching/learning process by suggesting various types of activities and by listing available references/resource materials

c. **Answers to assignment sheet*** — Provide possible or specific answers to assist teacher with evaluation and accountability

Information Sheet

d. **Answers to written test** — Provide possible or specific answers to assist teacher with evaluation and accountability

e. **Written test (criterion-referenced test)** — Measures a student's proficiency against a predetermined set of objectives (criteria) which have been covered in the information sheet

f. **Unit evaluation form** — Assists teacher in compiling assignment sheet ratings, job sheet ratings, and written test scores for each student

g. **Teacher supplement*** — Provides additional teaching aids to reinforce teaching/learning process

h. **Transparency master*** — Provides illustrations, charts, schematics, etc. needed by a teacher to clarify and reinforce objectives outlined in the information sheet

i. **Information sheet** — Presents cognitive information in sentence or outline form which enables a student to reach the unit and specific objectives

j. **Student supplement*** — Provides additional, relevant information needed by student to complete assignment sheets or job sheets

k. **Assignment sheet*** — Provides pencil and paper activities that give students the opportunity to make practical application of items in the information sheet

l. **Job sheet*** — Provides criteria to objectively evaluate student performance, provides a list of required tools and materials, and describes a step-by-step procedure for performing hands-on activities

7. **Procedure for evaluating components of a unit of instruction**

a. Arrange components of a unit of instruction in correct sequence.

b. Check objective sheet for:

- Clear and concise objectives
- Appropriate use of performance terms
- Logical sequencing of objectives (lower to higher order skills)

c. Review the information sheet to check that:

- Cognitive objectives are in the same order as on the objective sheet
- Technical content is complete and accurate

Information Sheet

- Information focuses on need to know information and includes knowledge necessary for successful completion of assignment and/or job sheets
- Artwork has been included as needed to clarify a piece of information

d. Review assignment sheets to ensure that:

- Titles match specific objectives
- Activities reflect skills necessary for employment/course completion
- Criteria and directions are clearly stated
- Enough information was provided for student to successfully complete assignment sheet

e. Check answers to assignment sheets against assignment sheets to make sure answers are correct.

f. Review job sheets to ensure that:

- Titles match specific objectives
- Activities reflect skills necessary for employment/course completion
- Criteria have been listed and are objective
- Appropriate tools and materials are listed
- Steps are complete and in correct order
- Artwork accurately depicts steps in procedure

g. Check written test to see if it:

- Corresponds with specific cognitive objectives
- Has clear, concise language and is usable
- Fairly reflects the knowledge the student should have concerning each objective

h. Check answers to written test against information sheet to make sure answers are correct.

i. Check transparency masters to make sure they agree with and support the objectives presented in the information sheet.

Information Sheet

j. Review the suggested activities sheet to determine if an instructional plan, appropriate teaching suggestions, and suggested supplemental materials have been provided.

k. Review the unit evaluation form and compare listed activities to objective sheet.

l. Review teacher and student supplements to make sure they provide additional information or activities and reinforce one or more objectives in the unit of instruction.

8. Components of a performance objective

Note: Well-written objectives should be clear, concise, and give direction to learning.

a. Exhibitor of performance — Who

b. Behavior or action learner is expected to exhibit (action verb) — What

c. Minimum level of acceptable responses (standards) — How much

Example: After completing this unit, the student should be able to identify twenty range plants found in the local community with 90 percent accuracy.

Who — Student

What — Identify

How much — 90 percent accuracy

9. Domains of the Taxonomy of Educational Objectives

a. **Cognitive** — Deals with recall or recognition of knowledge and the development of intellectual abilities and skills (knowing)

Note: Bloom identified six levels of learning within the cognitive domain which assist in the development of test items. These include knowledge, comprehension, application, analysis, synthesis, and evaluation.

b. **Psychomotor** — Deals with the physical responses of the learner and the development of manipulative skills (doing)

c. **Affective** — Deals with changes in interest, attitudes, and values and the development of appreciations and social-emotional adjustments (feelings)

Developing Components of a Unit of Instruction

Student Supplement 1—Sample Copyright Permission Request Letters

Sample A

Date: ____________________

To:

I am preparing a manuscript to be published by ________________________________

Author/tentative title ____

Estimated publication date ______________ Approximate # of pages __________

I request your permission to include the following material in this and all subsequent editions of my book.

Author(s) and/or editor(s) ____

Title of book or periodical ____

Title of selection ______________________________ Copyright date __________

From page __________, line __________, beginning with the words ____________

To page __________, line __________, ending with the words ______________

Figure # __________ on page __________ Table # __________ on page __________

(if necessary, attach continuation sheets)

Please indicate agreement by signing and returning the enclosed copy of this letter. In signing, you warrant that you are the sole owner of the rights granted and that your material does not infringe upon the copyright or other rights of anyone. If you do not control these rights, I would appreciate your letting my know to whom I should apply.

Thank you,

______________________________ ______________________________

Name Requestor's return address

AGREED TO AND ACCEPTED:

by ____________________ ____________________ ____________________

Signature Title Date

Credit and/or copyright notice: ____

____

Student Supplement 1

Sample B ______________________

(Date)

To: ______________________

____

____

____

From: ______________________

____

____

____

I am currently developing an instructional manual on ______________________ for ______________________. This is a request to reprint the following material to be used in our new manual.

Title ______________________

Copyright Date: ______________________ Author(s) ______________________

Page No.	Description of Material
________	______________________
________	______________________
________	______________________
________	______________________
________	______________________
________	______________________
________	______________________
________	______________________

If permission to use this material is granted, a proper credit line will be included such as:

____

For more information concerning this request, please call ______________________ and ask for ______________________.

Thank you very much for your time and consideration.

Cordially,

____

(Name)

AUTHORIZATION

Date: ______________________

By: ______________________

Title: ______________________

Signature: ______________________

Developing Components of a Unit of Instruction

Student Supplement 2—Selecting Key Words to Describe Thinking Skills (Cognitive Domain)

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
define	convert	calculate	analyze	assemble	appraise
describe	defend	change	classify	categorize	assess
identify	discuss	compute	compare	combine	compare
label	distinguish	demonstrate	diagram	compile	conclude
list	estimate	discover	differentiate	compose	contrast
match	explain	draw	discriminate	create	criticize
name	express	manipulate	dissect	develop	defend
outline	extend	modify	distinguish	design	discriminate
reproduce	generalize	operate	examine	explain	estimate
select	give	practice	identify	generate	explain
state	infer	predict	illustrate	modify	interpret
	paraphrase	prepare	investigate	organize	judge
	predict	produce	outline	plan	justify
	review	relate	point out	rearrange	measure
	rewrite	show	relate	reconstruct	rate
	summarize	simulate	select	relate	summarize
		solve	separate	reorganize	support
		translate	subdivide	revise	
		use		rewrite	
				summarize	
				write	

Developing Components of a Unit of Instruction

Student Supplement 3—Selecting Key Words to Describe Doing Skills (Psychomotor Domain)

Application

assemble
balance
build
calibrate
change
clean
compose
connect
construct
correct
create
design
dismantle
draw
drill
fasten
figure
fix
fold
follow
grind
grip
hammer
handle
heat
hook
identify
load
locate
make
manipulate
mend
mix
nail
paint
process
sand
saw
serve
sharpen
set
sew
sketch
start
stir
use
weigh
wrap
write

Developing Components of a Unit of Instruction

Student Supplement 4—Selecting Key Words to Describe Interpersonal Skills (Affective Domain)

Receiving	Responding	Valuing	Organization	Value Complex
ask	answer	complete	adhere	act
choose	assist	describe	alter	discriminate
describe	comply	differentiate	arrange	display
follow	conform	explain	combine	influence
give	discuss	form	compare	listen
hold	greet	initiate	complete	modify
identify	help	invite	defend	perform
locate	label	join	explain	propose
name	perform	justify	identify	qualify
point to	practice	propose	integrate	question
select	present	read	modify	revise
set erect	read	report	order	serve
reply	recite	select	organize	solve
use	report	share	synthesize	use
	select	study		verify
	tell	work		
	write			

Developing Components of a Unit of Instruction

Student Supplement 5—Unit Checklist

Reviewer ____________________

Publication ____________________

Unit ____________________

Date Reviewed ____________________

Date Accepted ____________________

	Accepted	Additional Work Needed
Objectives have been stated using appropriate performance terms		
Objectives have been presented in a logical sequence (lower to higher order thinking skills)		
Suggested activities provide specific teaching suggestions and incorporate workplace skills into various activities		
Supplemental materials provide addresses and phone numbers to order additional texts, publications, videos, films, etc.		
Answers to assignment sheets are correct		
Answers to written test are correct		
Written test corresponds with objective sheet and is usable		
Student/teacher supplements provide additional information or activities and reinforce one or more objectives in unit of instruction		
Transparency masters agree with and support the objectives presented in the information sheet		
Technical content is complete and accurate		
Artwork has been included (as needed) and source has been referenced		

Student Supplement 5

	Accepted	Additional Work Needed
Information sheet reinforces assignment and job sheets and provides enough information to satisfactorily complete tasks		
Assignment sheets and job sheets are valid tasks and reflect skills necessary for employment/course completion		
Directions are clearly stated on assignment sheets		
Criteria to evaluate assignment sheets and job sheets have been established and are objective		
Job sheet steps are complete and in correct order for students to satisfactorily complete task		
Appropriate equipment and materials are listed on job sheets		
Art in job sheet accurately depicts steps in procedure		

Comments: ____

____

____

Developing Components of a Unit of Instruction

Assignment Sheet 1—Select Components of a Performance Objective

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Identified the three components for each statement	_____
Followed directions	_____

Directions: Using each of the statements below, select the three components of a performance objective. Underline the portion that describes the person who is exhibiting the behavior, circle the portion that describes the behavior to be exhibited, and box in the portion that describes the minimum level of acceptable performance.

1. After completing this unit, the student should be able to identify the parts of a beef animal with eighty-five percent accuracy.
2. After completing this unit, the student should be able to type forty words per minute with no errors.
3. After completing this unit, the student should be able to calculate true interest rates when given the rate of interest and length of the loan with ninety-five percent accuracy.
4. After completing this unit, the student should be able to adjust an automatic choke according to manufacturer's specifications.
5. After completing this unit, the student should be able to define terms associated with behavioral objectives with eighty-five percent accuracy.
6. The student should be able to wire a three-way electrical switch according to the specification of the National Electric Code.
7. The student should be able to construct a bar graph showing the relationship between supply and demand according to the criteria listed on the assignment sheet.
8. After completing this unit, the student should be able to distinguish between simple and compound sugars with eighty-five percent accuracy.
9. After completing this unit, the student should be able to transcribe dictation from a tape into typewritten form with no more than three errors.
10. After completing this unit, the student should be able to select components of a performance objective with ninety-percent accuracy.

Developing Components of a Unit of Instruction

Assignment Sheet 2—Distinguish Between Performance and Nonperformance Objectives

Name ________________________________ Overall Rating __________

Evaluation criteria	**Rating**
Made proper distinction between objectives	______
Followed directions	______

Directions: Circle the number before each of the following statements that describe observable student behavior. Words such as will be, should be, or must do not distort the meaning or influence the action of the student when used in writing performance objectives.

1. The student will know six verbs with 90% accuracy.

2. The student will use a hand held calculator to calculate the cost of cement needed for a walk 10′ by 3′ by 4″ with 100% accuracy.

3. The student will be able to appreciate fully the advantages of an effective individual study program.

4. The student will be able to demonstrate the ability to divide six-digit numbers by three-digit numbers by correctly calculating thirteen problems from a list of fifteen within 40 minutes.

5. The student will demonstrate the measurement of length, volume, and mass of an object in metric units, given appropriate measuring devices.

6. The student will know which of two containers or objects has the greater volume.

7. The student will understand the meaning of Ohn's law.

8. The student will know the important battles of World War I.

9. The student will be able to list three major causes of the Civil War on the chalkboard.

10. The student will discuss in writing how supply and demand affects the marketing industry by using the six major points presented in class.

Developing Components of a Unit of Instruction

Assignment Sheet 3—Convert Nonperformance Objectives to Performance Objectives

Name ________________________ Overall Rating __________

Evaluation criteria	Rating
Converted each nonperformance objective to a performance objective	______
Performance objective states givens, behavior, and criteria	______
Followed directions	______

Directions: Read the following list of nonperformance objectives. Convert these objectives so that they are performance objectives.

Example: After completing this unit, the student should know how to use the recipe for baking a cake.
After completing this unit, the student should be able to use a recipe to bake a cake.

1. After completing this unit, the student should be able to understand the meaning of Ohm's law as related to electricity to the satisfaction of the instructor.

   Modified objective: ____

Assignment Sheet 3

2. After completing this unit, the student should demonstrate a working knowledge of converting common fractions to decimals.

   Modified objective: ______________________

3. After completing this unit, the student should realize fully the difference between performance and nonperformance objectives.

   Modified objective: ______________________

4. After completing this unit, the student should be familiar with the chemical formula for water.

   Modified objective: ______________________

Assignment Sheet 3

5. After completing this unit, the student should understand the steps in solving a mathematical equation.

Modified objective: ______________________________

6. After completing this unit, the student should be able to read and understand the meaning of a poem within thirty minutes with 100 percent accuracy.

Modified objective: ______________________________

Developing Components of a Unit of Instruction

Assignment Sheet 4—Write Objectives For a Unit of Instruction

Name ______________________________ Overall Rating __________

Part A

Evaluation criteria	Rating
Stated components of performance objective	______
Wrote objective in a clear, concise manner	______

Directions: Write a unit objective for a unit of your choice using the three components of a performance objective.

Note: Remember, a unit objective states the overall behavioral outcome expected of each student after completion of a unit of instruction. It should be brief and should highlight the higher level learning that should occur.

Unit objective: ______________________________

Assignment Sheet 4

Part B

Evaluation criteria	**Rating**
Began objective with performance term	______
Wrote objectives in a clear, concise manner	______
Sequenced objectives in logical order of teaching	______

Directions: Write specific objectives stated in terms of student performance needed in order to reach the unit objective written in Part A. The following steps are suggested:

1. Begin specific objectives with performance term.
2. Write objective for terminology first.

   Note: Most terminology is written using a match behavior.
3. Proceed from lower to higher levels of learning.

   Note: Assignment sheets and job sheets should be listed last.
4. Use a variety of performance terms to address various levels of thinking skills.
5. Sequence objectives according to logical order of teaching.

Specific objective: ____

____

____

Specific objective: ____

____

____

Specific objective: ____

____

____

Assignment Sheet 4

Specific objective: ____________________

Specific objective: ____________________

Specific objective: ____________________

Specific objective: ____________________

Specific objective: ____________________

Specific objective: ____________________

Specific objective: ____________________

Developing Components of a Unit of Instruction

Assignment Sheet 5—Develop an Information Sheet

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Provided necessary information to reach objective	______
Presented in same order as on objective sheet	______
Used notes, cautions, and examples as necessary	______
Included illustration(s) to support objective as needed	______

Directions: Develop an information sheet based on the specific objectives previously written in Assignment Sheet 4. The following steps are suggested:

1. Sequence in same order as specific objectives are presented on objective sheet.

2. Write in topical outline form.

3. Write only information necessary for reaching specific objectives.

   Note: This applies to information written in the topical outline.

4. Include notes if it is necessary to provide supplemental information.

   Note: This information is presented in complete sentence form.

5. Include cautions for safety purposes.

   Note: Cautions should be used to alert the student to potentially hazardous situations which may cause injury to the individual or damage equipment. These should appear in complete sentence form.

6. Include examples, as necessary, to clarify information presented.

   Note: These may be phrases, single words or problems, and do not have to be in complete sentence form.

7. Include illustrations as needed. Illustrations should be numbered consecutively throughout information sheet. Designate as "Figure 1, 2, 3, . . . "

Developing Components of a Unit of Instruction

Assignment Sheet 6—Design a Transparency Master, Teacher Supplement, or Student Supplement

Name ______________________________ Overall Rating __________

Evaluation criteria	Rating
Component supports one or more objectives in unit of instruction	______
Information/artwork is clear and easily understood	______

Directions: Design one of the following components to support/reinforce one or more specific objectives written in Assignment Sheet 4. Decide which component would best assist the teacher in presenting subject to class, then read suggestions below for selected component.

Note: Remember, transparency masters and teacher supplements appear in teacher guide only.

Transparency Master (TM)

1. Keep it simple. Avoid clutter and use of unnecessary information.
2. Title appropriately to correspond with related objective.
3. Label parts, types, tools, etc. as they appear on the information sheet.
4. Use line art, not photos, because it projects clearly on overhead projector.
5. Make sure illustrations are large enough to be seen when used on the overhead projector.

Teacher Supplement

1. Make sure supplement supports/reinforces one or more specific objectives.
2. Determine whether information should be presented as text, graph, chart, artwork, etc. to be most effective.
3. Avoid duplicating information which may be easily obtained in other sources.
4. Focus on **teacher** needs.

Assignment Sheet 6

Student Supplement

1. Make sure supplement supports/reinforces one or more specific objectives.
2. Use text, charts, checklists, tables, and practice sheets, etc. for supplements.
3. Reference supplements to specific objectives that they support.
4. Focus on **student** needs.

Developing Components of a Unit of Instruction

Assignment Sheet 7—Develop an Assignment Sheet and Answers to Assignment Sheet

Name ______________________ Overall Rating __________

Part A

Evaluation criteria	Rating
Activity reflects task identified by business/industry/labor	_____
Content relevant and well organized	_____
Directions are clear and concise	_____
Criteria stated for evaluation	_____

Directions: Develop an assignment sheet for at least one objective of a unit of instruction. The following suggestions are provided.

1. Choose task that has been identified by business/industry/labor as necessary for employment.
2. Begin title with verb to reflect action needed.
3. Examples of assignment sheets include a self-assessment, checklist, problems, case studies, or practice of a concept, idea, or procedure.
4. A brief introduction to help motivate students and to explain the purpose of the assignment sheet may be included.
5. Provide criteria for evaluation.

Assignment Sheet 7

Part B

Evaluation criteria	**Rating**
Specific or possible answers given	______

Directions: Write answers to the assignment sheet developed in Part A. The following suggestions are provided.

1. Provide specific answers when possible.

2. If a specific answer cannot be given, provide possible answers.

   Note: For case studies and those activities which involve problem solving and critical thinking skills, answers should address main points to be covered, but should allow for student individuality.

3. If activity includes a written report, stated criteria on assignment sheet should be used to evaluate student performance.

   Note: If criteria is used in place of answers, please note that performance will be evaluated according to criteria listed on assignment sheet.

Developing Components of a Unit of Instruction

Assignment Sheet 8—Develop a Job Sheet

Name ______________________ Overall Rating __________

Evaluation criteria	**Rating**
Activity reflects task identified by business/industry/labor	______
Tools, materials, and equipment are listed	______
Step-by-step process is given	______
Necessary illustrations are included and support process	______
Criteria stated for evaluation	______

Directions: Develop a job sheet for a unit of instruction. The following suggestions are provided.

1. List all tools, equipment, and materials needed to complete the job.
2. List step-by-step procedure for performing the job in proper sequence.
3. Begin each step with a verb.
4. Provide diagrams and illustrations as needed.
5. Provide criteria for evaluation.

Developing Components of a Unit of Instruction

Assignment Sheet 9—Write Test Items and Answers to Test Items

Name ______________________________ Overall Rating __________

Part A

Evaluation criteria	**Rating**
"How to" is given when needed	_____
Test items sequenced in same order as specific objectives	_____
Test item worded as closely as possible to specific objective	_____

Directions: Write a test item to measure each of the specific objectives listed on the objective sheet written in Assignment Sheet 4. The following suggestions are provided.

1. Test for same performance as called for in specific objectives.

   Note: If performance called for in objective is not suitable for test item, change performance term to fit appropriate action.

2. Sequence test items in same order as specific objectives.

3. Word test item as closely as possible to the specific objective.

4. If artwork is used, make sure it corresponds with artwork in the information sheet.

5. Tell student "how to" accomplish objective as necessary.

   Example: Select true statements concerning copyright laws by placing an "X" in the blank next to each true statement.

Assignment Sheet 9

Part B

Evaluation criteria	Rating
Answers given for each test item	______
Answers sequenced to each test item	______
Answers correspond to information in the information sheet	______

Directions: Write answers to the test items developed in Part A. The following suggestions are provided.

1. Sequence answers to test items.
2. Word answers as they appear in the information sheet.
3. If a specific answer cannot be given, provide possible answers. Answers should address main points to be covered, but should allow for student individuality.

Developing Components of a Unit of Instruction

Assignment Sheet 10—Prepare a Unit Evaluation Form

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Assignment sheets/job sheets identified on form	_____
Blanks provided for input as needed	_____
Space provided for additional activities	_____

Directions: Prepare a unit evaluation form for your unit of instruction. The following suggestions are provided.

1. Blanks for student name and unit rating should be provided.
2. A list designating assignment sheet ratings, job sheet ratings, and written test scores should be included. Space should be provided for any additional activities which will be evaluated by teacher.
3. Blanks for teacher comments should be provided following each assignment sheet or job sheet rating.
4. Blanks for both teacher and student signatures and date of completion of unit should be provided at bottom of the unit evaluation form.
5. Space for student comments may be included.
6. Space designating tardies, absences, and/or assigned duties during unit instruction period may be included.

Developing Components of a Unit of Instruction

Assignment Sheet 11—Prepare a Suggested Activities Sheet

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Instructional plan included	______
Teaching suggestions given and relevant to instruction	______
Ways to incorporate academic and workplace skills included in teaching suggestions	______
Reference lists provided and presented in proper form	______
Vendor addresses and phone numbers given	______
Instructions for evaluating student performance given	______

Directions: Prepare a suggested activities sheet for the teacher's use in planning for instruction and teaching a unit of instruction. The following suggestions are provided.

1. Develop as the last component although it follows the objective sheet in the teacher's guide.
2. Include an instructional plan.
3. Provide specific suggestions for teaching/learning activities. Include ways to incorporate academic and workplace skills into teaching of unit.
4. Provide a reference list of those materials used in developing components of a unit of instruction and a separate list of suggested supplemental resources. Provide an address and phone number for vendors of resource materials.
5. Instructions for evaluating student performance on job sheets should be provided last. An example is provided below.

Instructions For Evaluating Student Performance

When the student is ready to perform a specific task, obtain a copy of the job sheet which may be found in either the teacher guide or student manual. Then observe the student performing the procedure.

Process evaluation—Place a mark in the box to the left of each designated checkpoint if the student has satisfactorily achieved the step(s) for each checkpoint area. If the student is unable to correctly complete the procedure, have the student review the materials and try again.

Assignment Sheet 11

Product evaluation—Once the student has satisfactorily completed the procedure, rate the student product (outcome) using the criteria which have been provided as part of the job sheet. If the student's product is unacceptable, have the student review the materials and submit another product for evaluation.

Sample performance evaluation keys have been provided below. Many other keys are available. Select one rating (grading scale) which best fits your program needs.

Option A

4 - Skilled—Can perform job with no additional training.
3 - Moderately skilled—Has performed job during training program; limited additional training may be required.
2 - Limited skill—Has performed job during training program; additional training is required to develop skill.
1 - Unskilled—Is familiar with process, but is unable to perform job.

Option B

Yes—Can perform job with no additional training.

No—Is unable to perform job satisfactorily.

Developing Components of a Unit of Instruction

Assignment Sheet 12—Evaluate Components of a Unit of Instruction

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
Evaluated components according to criteria provided in the assignment sheet	______

Directions: Evaluate the components of a unit of instruction developed in the previous assignment sheets using the criteria provided below.

1. **Criteria for Objective Sheet**

a. Unit objective	Yes	No
• Does the unit objective state the overall performance expected of each student after completion of a unit of instruction?	______	______
• Is the unit objective given at the top of the page?	______	______
• Is the unit objective properly titled "Unit Objective?"	______	______
• Does the unit objective begin with the words "After completing this unit?"	______	______
• Do the sentences in the unit objective include	______	______
— "Who," which in this case is the student?	______	______
— "What," which is the observable behavior that is expected of the student?	______	______
— "How much" or a precise explanation of what the student is expected to accomplish?	______	______

Assignment Sheet 12

b. Specific objectives	Yes	No
• Does the first specific objective deal with terms and definitions that will be included in the unit of instruction?	_____	_____
• Are the specific objectives clear and concise?	_____	_____
• Do the specific objectives incorporate the "need to know" and "doing" activities which should be included in order to reach the unit objective?	_____	_____
• Is the performance desired in the specific objectives stated in precise terms, such as "list," "match," "solve," "apply," or "demonstrate?"	_____	_____
• Are the objectives stated in such a way that a test item can be written to test the student's ability?	_____	_____
• Do the specific objectives correspond with the test items in terms of performance?	_____	_____

2. Criteria for Suggested Activities Sheet

a. Instructional plan		
• Is an instructional plan provided?	_____	_____
• Does the plan assist the teacher in preparing for instruction?	_____	_____
• Does it list clearly all activities which the teacher must do in order to successfully teach the unit?	_____	_____
• Do the activities follow a logical order stating what must be done first, second, third, etc.?	_____	_____
b. Teaching suggestions		
• Do suggestions correspond with specific objectives?	_____	_____
• Do suggestions provide useful teaching/learning activities?	_____	_____
• Do activities reinforce academic and workplace skills?	_____	_____

Assignment Sheet 12

		Yes	No
c.	Reference lists		
•	Are resources used in developing the unit listed?	______	______
•	Has the proper form, including author, title, place of publication, publisher, and date of publication, been used?	______	______
•	Are suggested supplemental resources listed?	______	______
•	Has the standard address format been used for supplemental resources?	______	______
•	Have phone numbers been provided for vendors of suggested supplemental resources?	______	______
d.	Instructions for evaluating student performance		
•	Have instructions for evaluating student performance been provided in suggested activities?	______	______
•	Are instructions consistent with school/program policy?	______	______
•	Are instructions easily understood?	______	______
3.	**Criteria for Answers to Assignment Sheets**		
a.	Is an acceptable answer provided for each question or part of the assignment sheet?	______	______
b.	Will the answers show the teacher the degree of knowledge the student has concerning that specific assignment?	______	______
c.	If specific answers cannot be given, are possible answers provided?	______	______
d.	If specific or possible answers cannot be given, has statement, "Performance will be evaluated according to criteria listed on assignment sheet." been listed?	______	______

Assignment Sheet 12

		Yes	No
4.	**Criteria for Answers to Written Test**		
a.	Is an acceptable answer provided for each test item?	______	______
b.	Will the answer to the test item show the teacher the degree of knowledge the student has concerning the specific objective?	______	______
c.	Are the test answers consistent with the information presented in the information sheet?	______	______
d.	Are test answers presented in same sequence as test items?	______	______
5.	**Criteria for Written Test**		
a.	Does the test provide criterion referenced evaluation?	______	______
b.	Does the test provide accountability?	______	______
c.	Do the test items test the same performance called for by specific objectives?	______	______
d.	Do the test items follow the same sequence as the specific objectives?	______	______
e.	Is there a test item for each specific objective?	______	______
f.	Are the test items stated in clear, concise language?	______	______
g.	If artwork is used, does it correspond with the artwork in the information sheet?	______	______
6.	**Criteria for Unit Evaluation Form**		
a.	Are blanks provided for student name and unit rating?	______	______
b.	Are assignment sheets, job sheets, and written tests listed and blanks for ratings/scores provided?	______	______
c.	Have blanks for teacher comments been provided for each assignment sheet or job sheet?		
d.	Has space for "other" activities been provided?	______	______
e.	Are blanks for both teacher and student signatures and date of completion of unit of instruction provided at the bottom of the unit evaluation form?	______	______

Assignment Sheet 12

7. Criteria for Transparency Master, Teacher Supplement, and Student Supplement

a. Transparency master

	Yes	No
• Does artwork/information correspond with information sheet?	______	______
• Does it support one or more specific objectives?	______	______
• Is it clear and uncluttered?	______	______
• Does it focus on one central idea?	______	______
• If not black line art, can artwork be easily converted to line art?	______	______
• Is artwork suitable for overhead projection?	______	______
• Has copyright permission been obtained (if necessary)?	______	______
• Has a credit line been included (if necessary)?	______	______
• Does reference number appear in lower right corner of transparency master?	______	______

b. Teacher supplement

• Does supplement support/reinforce one or more specific objectives?	______	______
• Is it presented in proper form, i.e. text, graph, chart, artwork to be most effective?	______	______
• Does it assist the teacher in preparing for instruction?	______	______

c. Student supplement

• Does supplement/reinforce one or more specific objectives?	______	______
• Is it presented in proper form, i.e. text, charts, checklist, tables, practice sheets, to be most effective?	______	______

Assignment Sheet 12

			Yes	No
	•	Has it referenced specific objective(s) that it supports?	______	______
	•	Does it focus on student needs?	______	______
8.	**Criteria for Information Sheet**			
	a.	Is the information sheet sequenced in the same order as objectives are presented on the objective sheet?	______	______
	b.	Is "must know" information rather than "nice to know" information provided for each specific objective?	______	______
	c.	Is technical content complete and accurate?	______	______
	d.	Can information presented be measured by a test item?	______	______
	e.	Has the information been presented in topical outline form?	______	______
	f.	Do parts of information for a specific objective begin with parallel-type words?	______	______
	g.	Are terms in "terms and definitions" presented in alphabetical order?	______	______
	h.	Does the information sheet provide supportive information in the form of notes, examples, and cautions?	______	______
	i.	Are notes and cautions stated as complete sentences?	______	______
	j.	Do illustrations assist student with clarification of information?	______	______
	k.	Have illustrations been numbered consecutively throughout information sheet?	______	______
9.	**Criteria for Assignment Sheet**			
	a.	Does assignment sheet reflect skills necessary for employment/course completion?	______	______
	b.	Does title begin with a verb to reflect action needed?	______	______
	c.	Does title agree with specific objective?	______	______

Assignment Sheet 12

		Yes	No
d.	Does the assignment sheet provide a problem solving activity, give the opportunity for practice, or provide a student checklist to reinforce a concept, idea, or procedure presented in the information sheet?		
e.	Have blanks for student's name and overall rating been provided?		
f.	Does the assignment sheet provide criteria for evaluation?		
g.	Are directions precise and clearly stated?		
h.	Was enough information provided for student to successfully complete assignment sheet?		
10.	**Criteria for Job Sheet**		
a.	Does job sheet reflect skills necessary for employment/course completion?		
b.	Does title begin with a verb to reflect action needed?		
c.	Does title agree with specific objective?		
d.	Have blanks for student's name, date, attempt number, and overall rating been provided?		
e.	Has a tools, materials, and equipment list been included?		
f.	Are steps in the procedure presented in proper sequence?		
g.	Do steps begin with a verb?		
h.	Are steps in procedure precise and clearly stated?		
i.	Are illustrations used to clarify steps in the procedure?		
j.	Are illustrations numbered consecutively?		
k.	Have notes, cautions, and examples been used to clarify steps in procedure as needed?		
l.	Does the job sheet provide criteria for evaluation?		

Assignment Sheet 12

		Yes	No
m.	Have blanks designating checkpoints been included to assist in process evaluation?	______	______
n.	Has space for evaluator's comments been provided on last page of job sheet?	______	______

Evaluator's comments: ____

____

____

____

____

____

Competency-Based Education

Developing Learning Activity Packets

Developing Learning Activity Packets is one in a series of eight units of instruction designed to assist educators in developing and implementing competency-based education. Each unit addresses different aspects of the competency-based instructional process.

Units are presented in a competency-based format. Each unit contains: objective sheet, suggested activities for the teacher (including answers to assignment sheets and answers to the written test, written test, unit evaluation form, teacher supplements, and transparency masters), information sheets, student supplements, and assignment sheets. The materials may be used in a large or small group setting or in an individualized instructional mode.

The following units are included in the series:

Planning for Competency-Based Education

Aligning Curriculum

Managing Competency-Based Education

Writing Performance Objectives

Developing Teaching/Learning Strategies

Implementing Criterion-Referenced Evaluation

Developing Components of a Unit of Instruction

Developing Learning Activity Packets (LAPs)

It is hoped that this series will meet the needs of educators in developing or refining the necessary skills to improve instruction.

©1992 by the Mid-America Vocational Curriculum Consortium, Inc.

All rights reserved. No part of this series may be reproduced in any form or by any means without written permission from the publisher.

Printed in the United States of America by the
Oklahoma Department of Vocational-Technical Education
Stillwater, OK 74074-4364

Mid-America Vocational Curriculum Consortium, Inc.
1500 West Seventh Avenue
Stillwater, OK 74074-4364

The Mid-America Vocational Curriculum Consortium does not discriminate on the basis of race, creed, color, national origin, sex, age, religion, veteran status, or qualified handicap.

Developing Learning Activity Packets

Objective Sheet

Unit Objective

After completing this unit, the student should be able to develop a learning activity packet (LAP). The student should demonstrate this competency by completing the assignment sheet and by scoring a minimum of 85 percent on the written test.

Specific Objectives

After completing this unit, the student should be able to:

1. Match terms related to developing learning activity packets with their correct definitions.
2. List major purposes of a learning activity packet.
3. Complete statements describing the types of LAPs.
4. Select from a list of statements those which describe benefits of a LAP.
5. Match components of a LAP with their correct descriptions.
6. List three suggestions for sequencing LAPs.
7. Explain the importance of indexing LAPs.
8. Discuss guidelines for selecting media for LAPs.
9. Complete statements concerning selecting activities for LAPs.
10. Select true statements concerning copyright laws.
11. Explain the procedure for securing copyright permission.
12. Develop a referral LAP. (Assignment Sheet 1)
13. Develop a self-contained LAP (optional). (Assignment Sheet 2)

Developing Learning Activity Packets

Suggested Activities

Instructional Plan

Preparation

1. Read the unit carefully and plan for instruction. Study the specific objectives to determine the order in which you will present the objectives.
2. Review Teaching Suggestions section that follows. Plan for classroom activities.
3. Use Learning Steps for self-paced or individualized instruction, or as an outline for classroom or workshop presentation.
4. Plan presentation for enrichment of exceptional students as well as accommodation of special needs students.
5. Make a transparency from the transparency master included with this unit. This appears in the teacher guide only and is designed to be used with the following objective:

   TM 1—Components of a Learning Activity Packet (Objective 5)
6. Make copies of any handouts that you plan to distribute to students.
7. Obtain videotapes, posters, charts, and other items to supplement instruction of this unit. (See suggested supplemental resources.)
8. Review instructions for evaluating student performance, and make copies of the unit evaluation form.

Delivery and Application

9. Provide students with unit of instruction.
10. Discuss unit and specific objectives.
11. Discuss information sheet. Implement teaching plan to localize, supplement, and personalize the unit.
12. Discuss the assignment sheets. Review criteria for evaluation of these activities. Assignment Sheet 2 has been provided as an optional activity for students wishing to develop a self-contained LAP.

Suggested Activities

Evaluation

13. Discuss the use of the Unit Evaluation Form with students. Discuss the rating scale that will be used for student evaluation.

14. Make copies of the written test. Add or modify test items as needed.

15. Give written test.

16. Compile assignment sheet ratings and written test scores on the Unit Evaluation Form. Include any additional assignments.

17. Reteach and retest as required.

Teaching Suggestions

1. Introduce the unit by discussing the importance of developing relevant, well-written, and well-organized learning activity packets.

2. Explain the terminology provided in objectives 1 and 3 on the information sheet.

3. Collect as many sample LAPs as you can, both commercially prepared and locally developed. Have students study and compare their features.

4. Emphasize copyright laws and how they pertain to LAP development. Refer to objectives 10 and 11 in this unit, and make copies of Teacher Supplement 2 to distribute to class.

5. Explain the procedure for securing copyright permission. Refer student to Student Supplement 2 for examples of copyright request letters.

6. Have students bring a unit of instruction for their course, as well as appropriate resource materials, for use when completing Assignment Sheet 1.

7. Have students identify and obtain resource materials which will be needed to develop a self-contained LAP in Assignment Sheet 2.

8. Invite a speaker from a school that uses LAPs extensively and have him/her explain how the LAPs are managed physically and how student progress is tracked and evaluated.

9. Review Part V of Merle Wood's book, *Developing Your Own Instructional Units*, and have the students practice some of the suggestions given for incorporating artwork and graphics.

Suggested Activities

10. Refer students to Student Supplement 1 to assist them in evaluating a LAP. Assist them in the evaluation process and indicate to them possible areas for improvement.

11. Provide students with an opportunity to share their thoughts about LAP development. Use this activity to summarize unit content.

Resources Used in Developing This Unit

1. Blank, William E. *Handbook for Developing Competency-Based Training Programs.* Englewood Cliffs, NJ: Prentice-Hall, Inc., 1982.

2. *Developing Individualized Modules for Vocational-Technical Education.* Montgomery, AL: State of Alabama Department of Education, Division of Instructional Services, 1979.

3. Finch, Curtis R. and John R. Crunkilton. *Curriculum Development in Vocational and Technical Education: Planning, Content, and Implementation*, Third Edition. Boston, MA: Allyn and Bacon, Inc., 1989.

4. Gindele, John F. and Joseph G. Gindele. *An Instructional Package on How to Make an Instructional Package.* Minneapolis, MN: EDU-PAC Publishing Company, 1980.

5. Kozak, Ellen M. *Every Writer's Guide to Copyright and Publishing Law.* New York: Henry Holt and Company, 1990.

6. Mager, Robert F. and Kenneth M. Beach, Jr. *Developing Vocational Instruction.* Belmont, CA: David S. Lake Publishers, 1967.

7. Purcel, David J. *Performance-Based Instructional Design.* New York: McGraw-Hill, Inc., Gregg Division, 1989.

8. Wood, Merle. *Developing Your Own Instructional Units.* Arlington, VA: American Vocational Association, 1980.

Suggested Supplemental Resources

1. Videotape. *The New Copyright Law, Part 1.* Available from:

Gary H. Becker, Consultant
1770 Blackmon Court
Longwood, FL 32779
Phone: 305/322-1252 Ext. 243

538

Suggested Activities

2. Copyright information kits. Available from:

Copyright Office
Library of Congress
Washington, DC 20559
Phone: (202) 707-9100

Kits and their corresponding numbers include:

Books	109
Cartoons	111
Computer Programs	113
Copyright Searches	116
Fair Use	102
Games	108
Motion Pictures	110
Music	105
Photographs	107
Visual Arts	115

Developing Learning Activity Packets

Answers to Written Test

1.

a.	2	d.	1
b.	4	e.	6
c.	5	f.	3

2. a. To facilitate learning for individualized or self-paced instruction
   b. To supplement traditional instruction to provide more thorough and/or additional training

3. a. Self-contained
   b. Referral

4. a, b, d, e, f, g

5.

a.	2	d.	3	g.	9
b.	5	e.	8	h.	1
c.	7	f.	6	i.	4

6. Answer should include three of the following:

   a. Place common element objectives early in the sequence.
   b. Use occupational logic. Analyze the chain of competencies to determine which skills must be learned before others can be attempted.
   c. Present the easily-learned objectives in one of the earlier modules so that students experience success early.
   d. If possible, allow students a choice in the completion of LAPs to promote motivation and positive attitude.

7. Answer should address the following:

   a. LAPs should be numbered in such a way that they can be easily identified by students and instructors.
   b. Numbering system should facilitate management, e.g., storage, retrieval, student records.
   c. Components of a LAP should be color coded for easy identification.

8. Answer should address the following:

   a. Select media that support the type of performance expected of the student as stated in the performance objectives.
   b. Select media which are practical, readily available, and easy for the student to use.

Answers to Written Test

9. a. Objectives
   b. Practice
   c. Variety
   d. Psychomotor
   e. Feedback

10 b, c, d

11. Explanation may be in student's own words, but should address key points from the following:

    a. Identify all copy and/or artwork which has been borrowed from another source.

    b. Make sure source used is the most current and presents up-to-date artwork and/or information about subject.

    c. Mark appropriate pages in source with tabs, and indicate unit and component in which materials are to be used.

    d. Develop a master list of resources for each unit to use in writing permission letters and developing the reference list included in each unit of instruction.

    e. Prepare and send letters to publishers/corporations requesting copyright permission. Attach artwork which depicts how items will be used if permission is granted.

    f. When permission is granted, set appropriate credit line and add to final artwork/copy.

    g. File all copyright permission letters in a folder designating project title, and keep for an indefinite period of time so these can be referred to at a later date, if needed.

Developing Learning Activity Packets

Written Test

Name ______________________________ Score ____________

1. Match the terms on the right with their correct definitions by writing the corresponding numbers on the blanks provided.

______a. Statement of the intended purpose (overall behavioral outcome) expected of each student after completion of a unit of instruction or a LAP

______b. Objective stating performance required of a student to reach the unit objective

______c. Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

______d. Written packet utilizing a self-instructional format which contains information on a specific topic and learning activities that lead students to specified performance outcomes

______e. Learner-centered instruction in which the materials and activities are tailored to meet the needs of the individual student

______f. A statement of what the learner must do in observable and measurable terms

1. Learning activity packet
2. Unit objective
3. Performance objective
4. Specific objective
5. Criterion-referenced evaluation
6. Individualized instruction

Written Test

2. List the major purposes of a learning activity packet.

   a. ____

   ____

   b. ____

   ____

3. Complete the following statements by writing in the type of LAP being described.

   a. A ______________ LAP contains all the reading materials, activities, self-evaluations, etc. needed for the student to complete the packet independently.

   b. A ______________ LAP refers the student to other sources such as textbooks, reference books, videotapes, etc.

4. Select from the list below statements which describe benefits of LAPs by placing an "X" in front of the appropriate blanks.

   ______a. Format is compatible with competency-based education and is usable in an open entry/open exit system.

   ______b. Format provides for quality control of instruction.

   ______c. Students are evaluated based on set standards and are compared to the performance of other students.

   ______d. Students learn how to learn, how to manage time, self-discipline and self-direction.

   ______e. Format allows for better utilization of instructor time.

   ______f. Students can see concrete measure of progress.

   ______g. Each student can work at his/her own speed allowing time to reach mastery.

   ______h. Learning activities can be the same for all students.

Written Test

5. Match the components of a LAP on the right with their correct descriptions by writing the corresponding numbers on the blanks provided.

______a. Identifies the LAP and the related unit of instruction, lists prerequisites, and tells about how long it should take to complete the LAP, and other information needed for identification

______b. Gives the student specific instructions on how to proceed through the LAP and what resources to use

______c. Provides pencil and paper activities designed to correspond to specific objectives

______d. Evaluates student's knowledge and skills prior to starting LAP

______e. Includes keys to pre- and post- tests, keys to assignments, and suggestions for administering the LAP

______f. Contains information necessary for student to reach unit and specific objectives

______g. Provides criteria to objectively evaluate student performance, provides a list of required tools and materials, and describes a step-by-step procedure for performing hands-on activities

______h. A criterion-referenced test, usually written, to measure what has been learned and the effectiveness of the LAP

______i. States the performance(s) required of the student in order to complete the LAP

1. Posttest
2. Cover sheet
3. Pretest
4. Objective sheet
5. Learning activities sheet
6. Information sheet
7. Assignment or activities sheet
8. Teacher's guide/key
9. Job or procedure sheet

Written Test

6. List three suggestions for sequencing LAPs.

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

7. Explain the importance of indexing LAPs.

   a. ______________________________

   ____

   b. ______________________________

   ____

   c. ______________________________

   ____

8. Discuss guidelines for selecting media for LAPs.

   ____

   ____

   ____

   ____

   ____

   ____

   ____

   ____

Written Test

9. Complete the following statements concerning selecting activities for LAPs.

   a. Learning activities must relate directly to the unit ________________.

   b. Activities should allow for ________________ of skills required by the unit objective.

   c. A ________________ of activities should be included to maintain student interest.

   d. Activities should cover cognitive, affective, and ________________ domains.

   e. Activities should provide for ________________ and reinforcement of performance.

10. Select true statements concerning copyright laws by writing an "X" on the blank before each true statement.

   ______a. Fair use doctrine exempts educators from copyright law.

   ______b. Copyright gives exclusive rights to authors to control the reproduction and distribution of their original works.

   ______c. Required notice of copyright need only be the word "copyright" or some acceptable abbreviation, the year of publication, and the name of the copyright owner.

   ______d. Violation of copyright laws may result in imprisonment and a fine of thousands of dollars.

11. Explain the procedure for securing copyright permission. Write your answer on the blanks provided.

____

____

____

____

____

____

____

Written Test

*Permission to duplicate this test is granted.

Developing Learning Activity Packets

Unit Evaluation Form

Student Name ______________________________ Unit Rating __________

Assignment Sheet 1—Develop a Referral LAP Rating ______

Comments: ____

____

Assignment Sheet 2—Develop a Self-Contained LAP (optional) Rating ______

Comments: ____

____

Written Test Scores

Pretest ______ Posttest ______ Other ______

Other ____

____

Teacher Signature ______________________________ Date __________

Student Signature ______________________________ Date __________

***Permission to duplicate this form is granted.**

Developing Learning Activity Packets

Learning Steps

Name ____

Check the following blanks as you complete each step.

______ 1. **Read** Unit and Specific Objectives.

______ 2. **Study** Information Sheet, Objectives 1 through 11, pp. 3-9; Student Supplement 1—Checklist for LAP Development, pp. 11 and 12; and Student Supplement 2—Sample Copyright Permission Request Letters, pp. 13 and 14.

______ 3. **Do** Assignment Sheet 1—Develop a Referral LAP, pp. 15-20.

Note: Assignment Sheet 2—Develop a Self-Contained LAP, p. 21, may be substituted for Assignment Sheet 1. Ask teacher which assignment should be completed.

______ 4. **Stop** Ask teacher to evaluate completed assignment sheet. If evaluation is satisfactory, continue to Step 5. If evaluation is not satisfactory, repeat steps 2 and 3.

______ 5. **Take** Written Test. (See teacher) If your score is 85 percent or above, continue to step 6. If you do not score 85 percent or above, ask your teacher for directions and/or other areas of study.

______ 6. **Sign** Unit Evaluation Form to verify ratings received on assignment sheet and written test.

***Permission to duplicate this form is granted.**

Developing Learning Activity Packets

Teacher Supplement 1—Utilization of Copyrighted Materials

When developing instructional materials it is important for the writer to provide accurate information and artwork which reflect current industry needs. And, it is critical to obtain copyright permission to reproduce the selected information and/or artwork.

To better understand the importance of requesting and obtaining copyright permission, let us take a closer look at copyright laws.

- The Copyright Law of 1909 governs a work first published before Januray 1, 1978.
- The Copyright Act of 1976 (in its original form) governs a work first published between January 1, 1978, and March 1, 1989.
- The Copyright Act of 1976 (as modified by the Berne Convention for the Protection of Literary and Artistic Works) governs a work first published after March 1, 1989.

In accordance with these laws of the United States, copyright protection is provided to the authors of "original works of authorship" including literary, dramatic, musical, artistic, and certain other intellectual works.

Copyright protection begins from the time the work is created in "fixed" form. It is illegal for anyone to violate any of the rights provided to the owner of copyright by the laws. Anyone suspected of violating the law may be sued by the author/owner, and, if found guilty of copyright infringement, all materials containing the copyrighted materials could be ordered destroyed, and the violator could be fined thousands of dollars for damages.

Writers are liable if they have not identified all copyrighted materials, or if they have attempted to pass the work off as their own. Acknowledging the source of the copyright material does not substitute for obtaining permission. The safest course is always to get written copyright permission from the copyright owner before using copyrighted material.

Educational agencies/organizations cannot claim exemption from copyright laws. According to Section 107 of the copyright law which deals with "fair use" of copyrighted materials for educational purposes, there are four factors which must be considered in determining whether or not a particular use is fair. These are: (1) the purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes; (2) the nature of the copyrighted work; (3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market for or value of the copyrighted work.

Teacher Supplement 1

Another consideration when working with various resources is the ability to identify copyrightable works and uncopyrightable works of industrial design, or "useful articles." Examples of useful articles include tape measures, rulers, standard charts, and tables consisting of common knowledge. These items are not protected by copyright law, even if they appear in a copyrighted publication, but the way that they are expressed or described is protected.

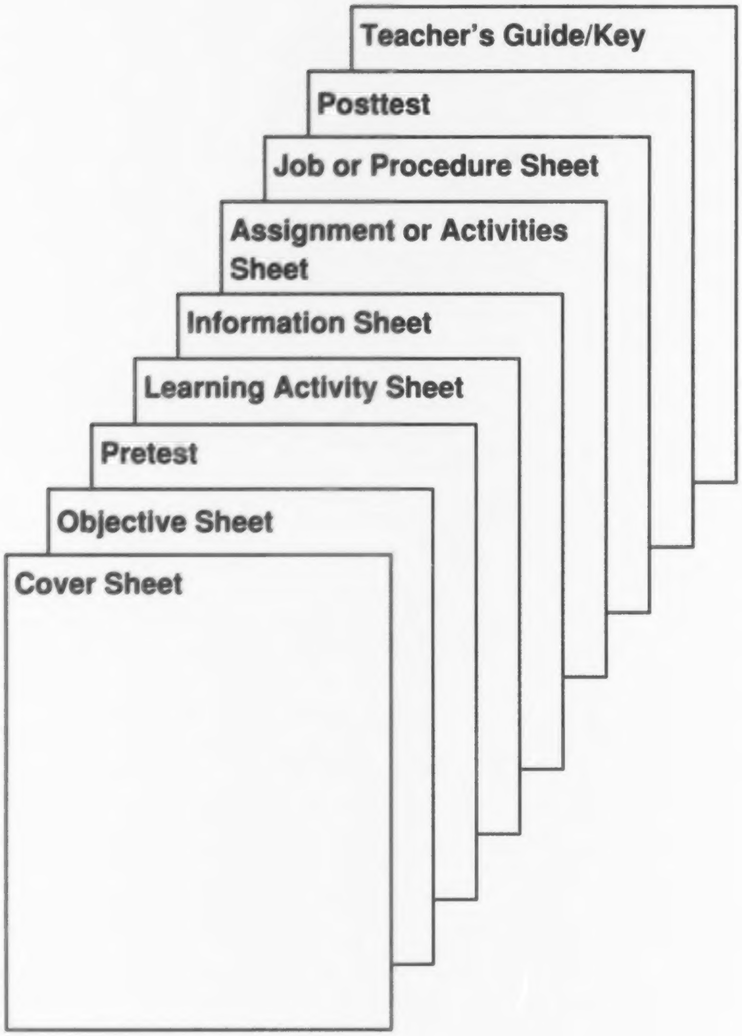
Ownership of resources may belong to either the author or his/her publisher. It is important to note who has the copyright on any materials which you wish to borrow from. For instance, MAVCC publications are copyrighted and belong exclusively to the organization, since the writer (author) has been hired specifically to develop the instructional materials. It may be necessary to contact the publisher first to determine ownership of the requested material.

Permission to reproduce copy or artwork is generally given if a credit line is displayed or a nominal fee is paid. However, in the case of major publishers, it may become increasingly difficult to obtain copyright permission. If permission is denied, locate new artwork or omit artwork from the page.

Although requesting copyright permission is sometimes very time-consuming, remember the possible consequences if one is found guilty of copyright infringement. It could be your reputation and money at stake.

***Permission to duplicate this supplement is granted.**

Components of a Learning Activity Packet



Teacher's Guide/Key

Posttest

Job or Procedure Sheet

Assignment or Activities Sheet

Information Sheet

Learning Activity Sheet

Pretest

Objective Sheet

Cover Sheet

Developing Learning Activity Packets

Information Sheet

1. **Terms and definitions**

   a. **Criterion-referenced evaluation** — Procedure that measures student performance or knowledge according to the conditions and standards stated in the performance objective

   Note: The activities being evaluated may be verbal, nonverbal, manipulative, or any type of performance provided it is appropriate for measuring the goal as stated in the performance objective.

   b. **Individualized instruction** — Learner-centered instruction in which the materials and activities are tailored to meet the needs of the individual students

   Note: Most instruction in the past has been group instruction where the teacher provides the same materials in the same way to the whole class and little consideration is given to individual learning differences.

   c. **Learning activity packet (LAP)** — Written packet utilizing a self-instructional format which contains information on a specific topic and learning activities that lead students to specified performance outcomes.

   d. **Performance objective** — A statement of what the learner must do in observable and measurable terms

   Note: Performance objectives are sometimes referred to as behavioral objectives.

   e. **Specific objective** — Objective stating performance required of a student in order to reach the unit objective

   Note: Specific objectives may also be referred to as interim, sub, enabling, or subordinate objectives.

   f. **Unit objective** — Statement of the intended purpose (overall behavioral outcome) expected of each student after completion of a unit of instruction or a LAP

2. **Major purpose of a learning activity packet**

   a. To facilitate learning for individualized or self-paced instruction

   b. To supplement traditional instruction to provide more thorough and/or additional training

Information Sheet

3. Types of LAPs

a. **Self-contained LAP** — A learning activity packet which includes all the reading materials, activities, self-evaluations, etc. needed for the student to complete the packet independently.

b. **Referral LAP or SLAP (Simple learning activity packet)** — A learning activity packet which refers the student to other sources such as textbooks, reference books, videotapes, etc.

Note: All LAPs should be designed so that the student has detailed instructions to follow and knows exactly what he-she will be expected to know or be able to do and how his/her performance will be evaluated.

4. Benefits of a LAP

a. Format provides for quality control of instruction. All students receive the same information.

b. Format is compatible with competency-based education and is usable in a open entry/open exit system.

c. Both student and teacher know exactly what is to be learned and at what level of proficiency.

d. Student progress can be monitored more closely.

e. Format allows for better utilization of instructor time. The instructor has more time to work with individual students, answer questions, provide feedback, and evaluate student performance.

f. Students can see concrete measure of progress. At the end of the LAP, students are able to do something they couldn't do before or know something they didn't know before. Students are motivated to continue learning.

g. When content changes, an individual LAP may be easily updated.

h. Students are evaluated on individual performance based on a set standard and are not compared to the performance of other students.

i. Students learn how to learn, how to manage time, self-discipline, and self-direction.

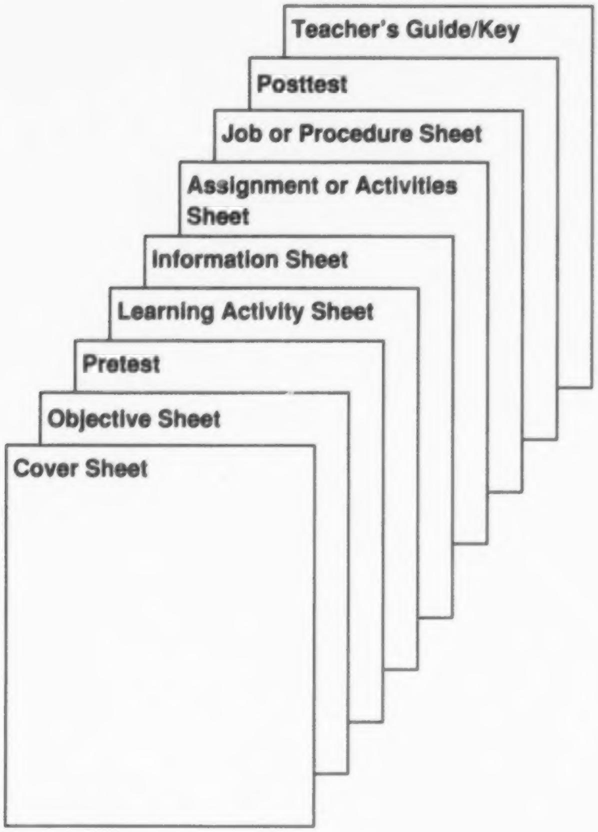
j. Each student can work at his/her own speed allowing time to reach mastery.

k. Learning activities can be varied to allow for differences in student skill levels and learning styles, thus providing a method of individualizing instruction.

Information Sheet

5. Components of a LAP and their descriptions

Figure 1


Teacher's Guide/Key
Posttest
Job or Procedure Sheet
Assignment or Activities Sheet
Information Sheet
Learning Activity Sheet
Pretest
Objective Sheet
Cover Sheet

Note: LAPs vary in length and contain different parts depending on the materials being covered and the type of LAP. These parts may have different names. However, all LAPs should at least state performance objectives, contain learning activities and self-evaluations, and provide for a posttest.

a. **Cover sheet** — Identifies the LAP and the related unit of instruction, lists pre-requisites, and tells about how long it should take to complete the LAP, and other information needed for identification. The cover sheet may also state the performance(s) required in order for a student to successfully complete the LAP.

Note: A statement of rationale may also be included to communicate to the learner the overall intent of the package and its importance or relevance to the student's course of study.

Information Sheet

b. **Objective sheet** — States the performance(s) required of the student in order to complete the LAP. Both the unit and specific objectives are included on this sheet.

Note: This component is included in a self-contained LAP. Objectives for a referral LAP are found on the cover sheet.

c. **Pretest** — Evaluates students knowledge and skills prior to starting the LAP.

Note: If the student scores sufficiently high on the pretest or successfully completes the activity on a performance test he/she should be granted credit for the LAP and be allowed to move on to the next LAP. The pretest could also serve to determine which of the activities in the LAP the student needs to complete.

d. **Learning activity sheet (learning steps)** — Gives the student specific instructions on how to proceed through the LAP and what resources to use. It usually includes a checklist for the student to keep track of progress.

Note: If students are referred to resources outside the LAP, they should be referred to the exact page, sections, and/or paragraphs to read and be told where to find resources.

e. **Information sheet** — Contains information necessary for student to reach unit and specific objectives.

Note: This component is included only in a self-contained LAP. In a referral LAP, the student is referred to outside resources, such as a textbook, to obtain necessary information.

f. **Assignment or activities sheet** — Provides pencil and paper activities designed to correspond to specific objectives and to reinforce the information provided from reading an information sheet, from reading a textbook, or from viewing a videotape, etc.

Note: Answers should be provided for immediate feedback. If specific answers cannot be given, the teacher should evaluate the student using criteria listed on the assignment sheet before the student continues with the LAP.

Information Sheet

g. **Job or procedure sheet** — Provides criteria to objectively evaluate student performance, provides a list of required tools and materials, and describes a step-by-step procedure for performing hands-on activities. Artwork should be incorporated whenever possible to clarify steps in the procedure. Audio, video, and/or slide tape sets are also recommended to support job sheets.

Note: Assignment sheets and job sheets are included in a self-contained LAP. In a referral LAP, the student is generally referred to another source, such as a unit of instruction, for related activities.

h. **Posttest** — A criterion-referenced test, usually written, to measure what has been learned and the effectiveness of the LAP. If the objective requires performance of a skill, a job sheet should be used as a practical test.

Note: Results of student evaluations can be helpful in revisions of LAPs.

i. **Teacher's guide/key** — Includes keys to pretest and posttest, keys to assignments in the LAP, and suggestions for administering the LAP.

6. **Suggestions for sequencing LAPs**

a. Place common element objectives early in the sequence.

b. Use occupational logic. Analyze the chain of competencies to determine which skills must be learned before others can be attempted.

c. Present the easily-learned objectives in one of the earlier modules so that students experience success early.

d. If possible, allow students a choice in the completion of LAPs to promote motivation and positive attitude.

7. **Importance of indexing LAPs**

a. LAPs should be numbered in such a way that they can be easily identified by students and instructors.

b. Numbering system should facilitate management, e.g. storage, retrieval, student records.

c. Components of a LAP should be color coded for easy identification.

Note: LAPs should be designed so that they can be used over and over again. Students should use separate answer sheets for pretests, posttests, and learning activities sheets.

Information Sheet

8. Guidelines for selecting media for LAPs

a. Select media that support the type of performance expected of the student as stated in the performance objectives.

Example: If the student is required to be able to distinguish a regular heartbeat from an irregular heartbeat, then an appropriate instructional medium would be some type of audio device.

b. Select media which are practical, readily available, and easy for the student to use.

9. Selecting activities for LAPs

a. Learning activities must relate directly to the unit objectives.

b. Activities should allow for practice of skills required by unit objective.

c. A variety of activities should be included to maintain student interest.

d. Activities should cover cognitive, affective, and psychomotor domains.

e. Activities should provide for feedback and reinforcement of performance.

10. Copyright laws

a. A copyright is the exclusive right of the author to control the reproduction and distribution of "original works" of authorship fixed in any tangible medium of expression.

b. Required notice of copyright need only be the word "copyright" or some acceptable abbreviation, the year of publication, and the name of the copyright owner.

c. Fair use doctrine does not automatically exempt educators from copyright laws.

d. If the material to be copied is copyrighted and use of the material is not covered by the fair-use exception, then permission should be requested.

Note: The key to obtaining permission is to make sure the request is directed to the right person.

e. Violation of copyright laws may result in:

- Destruction of materials containing copyrighted materials
- Fine of thousands of dollars for damages

Information Sheet

- Loss of reputation

  Note: The safest course of action is always to get copyright permission from owner before using copyrighted materials.

f. When preparing instructional materials, source of information and/or artwork should be identified, and written approval to reproduce copyrighted material should be obtained prior to printing.

11. Procedure for securing copyright permission

a. Identify all copy and/or artwork which has been borrowed from another source. Include the following information:

Source/Title:
Author:
Copyright Date:
Publisher:
Publisher Address/Location:
Page and Figure Number:

b. Make sure source used is the most current and presents up-to-date artwork and/or information about subject.

Note: It may be necessary to check with resource library to see if a more recent edition has been published.

c. Mark appropriate pages in source with tabs, and indicate unit and component in which materials are to be used.

Note: If changes are needed, it may be necessary to make a xerox copy. However, the original source art should be available for reproduction, and permission must still be obtained.

d. Develop a master list of resources for each unit to use in writing permission letters and developing the reference list included in each unit of instruction.

e. Prepare and send letters to publishers/corporations requesting copyright permission. Attach artwork which depicts how items will be used if permission is granted.

f. When permission is granted, set appropriate credit line and add to final artwork/copy.

g. File all copyright permission letters in a folder designating project title, and keep for an indefinite period of time so these can be referred to at a later date, if needed.

Developing Learning Activity Packets

Student Supplement 1—Checklist for LAP Development

Cover Sheet		**Yes**	**No**
1.	The LAP and the related unit of instruction are clearly identified.	______	______
2.	Prerequisites specify other LAPs that should be completed prior to starting the LAP or other competencies required of the student.	______	______
Objective Sheet			
1.	Both unit and specific objectives are included.	______	______
2.	The unit objective tells the student exactly what he/she will be able to do, under what conditions, and at what level of performance.	______	______
3.	Specific objectives contribute to student mastery of the unit objective.	______	______
Pretest and Posttest			
1.	Both pre- and post- tests are designed to evaluate student performance based on the stated objectives.	______	______
2.	Instructions for completing the assessments are included and are easy to follow.	______	______
3.	If a pretest is used, the student who performs at the required level is allowed to move on to the next LAP.	______	______
Learning Activities			
1.	Instructions (learning steps) are clear and complete.	______	______
2.	If students are referred to outside resources or other media, the reference is specific.	______	______
3.	Students are provided with some method of checking off instructions as they are completed.	______	______
4.	If a separate learning activities sheet is not used and instead specific instructions are included throughout the LAP, the instructions are easily identifiable (for example, highlighted or set off with graphics).	______	______

Student Supplement 1

	Information Sheet	**Yes**	**No**
1.	Reading assignments are short and cover only need-to-know information.	______	______
2.	Graphics, illustrations, and cartoons have been incorporated into the test.	______	______
	Assignment or Activities Sheet		
1.	Each learning activity matches a specific objective.	______	______
2.	The learning activity is designed to have the student practice the type of performance required by the matching objective.	______	______
3.	Self-evaluation of performance and immediate feedback is provided.	______	______
4.	A variety of activities have been used.	______	______
	Job or Procedure Sheet		
1.	Criteria for evaluation of student performance is given.	______	______
2.	Tools and materials needed to complete activity are listed.	______	______
3.	A complete, step-by-step procedure is provided.	______	______
4.	Artwork, if used accurately, depicts steps in procedure.	______	______
5.	Checkpoints are included to assist in evaluating procedure.	______	______
	Teacher's Guide/Key		
1.	Includes keys to the pre- and post- tests.	______	______
2.	Includes keys to assignment/activities in the LAP if they are not included in the student LAP.	______	______
3.	Includes special instructions for administering the LAP.	______	______

Developing Learning Activity Packets

Student Supplement 2—Sample Copyright Permission Request Letters

Sample A

Date: ____________________

To:

I am preparing a manuscript to be published by ______________________________

Author/tentative title ______________________________

Estimated publication date ______________ Approximate # of pages ________

I request your permission to include the following material in this and all subsequent editions of my book.

Author(s) and/or editor(s) ______________________________

Title of book or periodical ______________________________

Title of selection ______________________________ Copyright date ________

From page ________, line ________, beginning with the words ____________

To page ________ , line ________ , ending with the words ____________

Figure # ________ on page ________ Table # ________ on page ________
(if necessary, attach continuation sheets)

Please indicate agreement by signing and returning the enclosed copy of this letter. In signing, you warrant that you are the sole owner of the rights granted and that your material does not infringe upon the copyright or other rights of anyone. If you do not control these rights, I would appreciate your letting my know to whom I should apply.

Thank you,

______________________________ ______________________________
Name Requestor's return address

AGREED TO AND ACCEPTED:

by ______________________ ______________________ ______________
Signature Title Date

Credit and/or copyright notice: ______________________________

Student Supplement 2

Sample B ______________________________

(Date)

To: ______________________________

____

____

____

From: ______________________________

____

____

____

I am currently developing an instructional manual on ______________________________ for ______________________________. This is a request to reprint the following material to be used in our new manual.

Title: ______________________________

Copyright Date: ____________________ Author(s) ____________________

Page No.	Description of Material
________	______________________________
________	______________________________
________	______________________________
________	______________________________
________	______________________________
________	______________________________
________	______________________________
________	______________________________

If permission to use this material is granted, a proper credit line will be included such as:

____

For more information concerning this request, please call ____________________ and ask for ____________________.

Thank you very much for your time and consideration.

Cordially,

____

(Name)

AUTHORIZATION

Date: ____________________

By: ____________________

Title: ____________________

Signature: ____________________

Developing Learning Activity Packets

Assignment Sheet 1—Develop a Referral LAP

Name ______________________________ Overall Rating ________

Evaluation criteria	**Rating**
Systematic approach was used in developing LAP	______
LAP clearly identifies any prerequisites and states purpose, performance objectives, and resources needed for successful completion of LAP	______
Learning steps are clear and complete and provide a method of checking off steps as they are completed.	______

Directions: Select a unit of instruction developed for your program area. Develop a referral LAP teaching the unit content and skills. Personalize/localize/supplement the selected unit to fit your teaching situation. Use forms provided to complete this assignment sheet.

Step 1—Develop the cover sheet

This introductory page should include:

- Program area
- Major instructional area
- Name of instructional unit
- Learning activity packet number
- Names of prerequisite LAPs, if any
- Introduction/purpose statement
- List of competencies student should be able to do when the LAP is completed

Assignment Sheet 1

Example of Cover Sheet

Learning Activity Packet for Exploring Technology Education

Major Instructional Area Communication

Instructional Unit Introduction to Communication

Learning Activity Packet (LAP) No. I-B

Prerequisite LAP(s): I-A Introduction to Technology
II-A General and Laboratory Safety

Introduction/Purpose — To define communication technology, how it relates to the past, future, and present, and apply the communication model to establish an organization.

Competencies Included In This LAP:

1. Research a communication device and discuss its possible effect on the future.
2. Send a message in a unique manner.
3. Establish a communication organization to produce a product or service.
4. Research a communication career.

Assignment Sheet 1

Step 2—Develop the learning activities sheet (learning steps)

The learning steps should include:

- Check-off system so that student and teacher can monitor progress
- Step number
- Action verb
- Reference to unit of instruction or supplemental material

  Note: Include page numbers, if possible. Supplemental materials such as manuals, videos, etc. should be available on student demand.

Assignment Sheet 1

Example of Learning Activities Sheet

Exploring Technology Education
Unit I-B—Introduction to Communication

Check the following blanks as you complete each step.

______ 1.	**Read**	Unit and Specific Objectives, pages 1B and 3B.
______ 2.	**Do**	Student Supplement 1—Parent Communique, Page 23B.
______ 3.	**Stop**	Have instructor evaluate completed handout. If evaluation is satisfactory, continue to Step 4. If evaluation is not satisfactory, repeat step 2.
______ 4.	**Study**	Information sheets, Objectives I through III, pages 5B and 6B, and Transparency 1, page 13B.
______ 5.	**Do**	Assignment Sheet 1—Research a Communication Device and Discuss Its Possible Effect On the Future, p. 25B.
______ 6.	**Stop**	Have instructor evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 7. If evaluation is not satisfactory, repeat steps 4 and 5.
______ 7.	**Study**	Information sheets, Objectives IV through VIII, pages 6B and 9B, and Transparencies 2 through 5, pages 15 through 21.
______ 8.	**Do**	Assignment Sheet 2—Send a Message in a Unique Manner, page 27B.
______ 9.	**Stop**	Have instructor evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 10. If evaluation is not satisfactory, repeat steps 7 and 8.
______10.	**Study**	Information sheets, Objectives IX and X, pages 9B and 11B.
______11.	**Do**	Assignment Sheet 4—Research a Communication Career, page 31B.
______12.	**Stop**	Have instructor evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 13. If evaluation is not satisfactory, repeat steps 10 and 11.
______13.	**View**	Video B-1—Introduction to Communication. Be prepared to discuss and answer questions as directed by instructor.
______14.	**Do**	Assignment Sheet 3—Establish a Communication Organization to Produce a Product or Service, page 29B. Work as a group as directed by instructor. Be prepared to report your decisions to instructor.
______15.	**Stop**	Have instructor evaluate completed assignment sheet. If evaluation is satisfactory, continue to step 16. If evaluation is not satisfactory, repeat steps 13 and 14.
______16.	**Take**	Test on Unit 1—Introduction to Communication. (See instructor.) If your score is 85 percent or above, proceed to the next Learning Activity Packet (LAP). If you do not score 85 percent or above, ask your instructor for directions and/or other areas of study.

Assignment Sheet 1

Learning Activity Packet for ______________________________

Major Instructional Area ______________________________

Instructional Unit ______________________________

Learning Activity Packet (LAP) No. ______

Prerequisite LAP(s):

Introduction/Purpose —

Competencies Included In This LAP:

Assignment Sheet 1

____
(Program Name)

____
(LAP number—Instructional Unit)

Check the following blanks as you complete each step.

______ 1.

______ 2.

______ 3.

______ 4.

______ 5.

______ 6.

______ 7.

______ 8.

______ 9.

______10.

______11.

______12.

(Continue on additional sheets)

Developing Learning Activity Packets

Assignment Sheet 2—Develop a Self-Contained LAP (Optional)

Name ______________________________ Overall Rating __________

Evaluation criteria	**Rating**
LAP will be evaluated according to criteria provided in Student Supplement 2	______

Directions: Select one duty for your program area and develop a self-contained learning activity packet for that duty. Include all the necessary components in your packet. Refer to the information sheet in this unit, MAVCC's unit "Developing Components of a Unit of Instruction," and Student Supplement 1 to guide you in developing your LAP and to assist you in evaluating your completed LAP.

Note: Prior to beginning this assignment, collect resource materials which will be needed to develop your self-contained LAP.